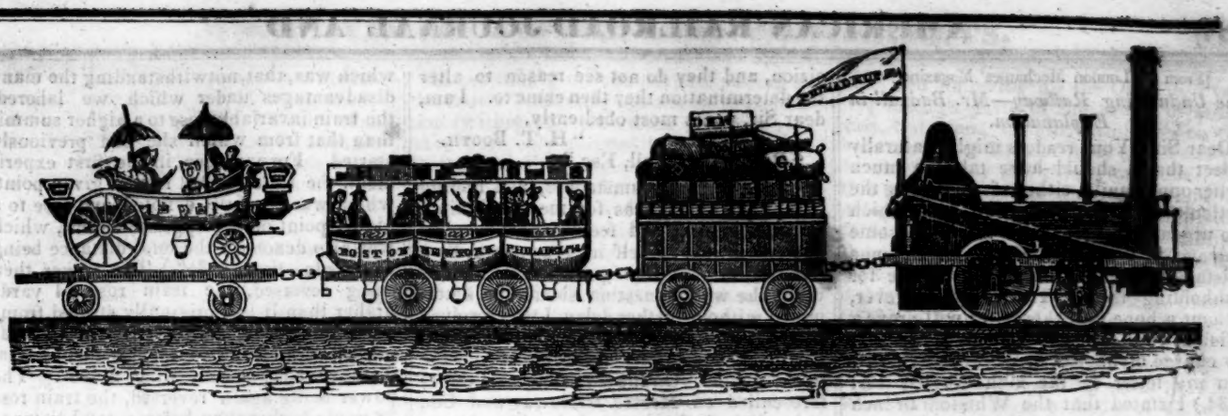

AMERICAN RAILROAD JOURNAL,
AND ADVOCATE OF INTERNAL IMPROVEMENTS.

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AMERICAN RAILROAD JOURNAL.

NEW-YORK, MARCH 28, 1835.

AVERY'S ROTARY STEAM ENGINE — *applied to a Locomotive.*—We were much gratified, yesterday, with an excursion to Newark, on the Railroad, the cars being drawn a part of the way by Mr. Avery's Rotary Engine.

This is the first, and we are highly gratified to know that it has proved an entirely successful application, of this ingenious, yet exceedingly simple engine, to Railroad uses. Mr. Avery had, for near two years, one of these Engines in successful operation in his machine shop at Syracuse—which proved to his entire satisfaction that it might be applied to other purposes; and with a perseverance worthy of the success which has crowned his efforts, he has devoted himself to the construction of a Locomotive Engine, which is now in use on the Newark Railroad, performing that part of the route only between the Hackensack and Newark. There being no revolving platform at Jersey City, it does not yet run through the whole line.

Mr. Avery is unfortunate in the road on which he makes his first trial. A straight and smooth road is necessary in order to attain a high velocity; but the Newark road, unfinished as it is, and in some places more or less affected by frost, with one or two very short curves, will not admit of the speed which this engine is capable of attaining. On returning from Newark, however, we noted the time of starting from the east side of the Passaic bridge—where the engine was stopped, in consequence of having parted the fast by which it was connected with the car,—and of arriving at the revolving platform, within a few rods of the Hackensack, called 4½ to 5 miles, which distance was performed in a fraction less than *eleven* minutes.

This Engine is an *experiment only.* It is the first and *only* effort to apply it to such purposes, and under all the disadvantages of poor wood, and a road much in want of adjustment, it may be considered as a highly successful experiment.

When Mr. Avery shall have completed another and more powerful engine, which he has now in course of construction, designed to test the principle more effectually, on a more perfect road, we doubt not of his attaining a *greater* velocity than has ever yet been attained in *this* country—or even in Europe—we shall probably be deemed "Rotary Engine mad," when 40 miles per hour is named as not of difficult attainment.

With true Yankee enterprize, Mr. Avery and his associate, Capt. Lynde, are determined to carry the war into the enemy's camp, by taking one of their engines, complete and ready for use, to England.

This engine, though very simple in its construction, can be much more clearly described with engravings, which we expect soon to receive, and therefore we omit a particular description for the present.

Annexed, owever, is a short account of the performance of one of the small sized engines built by Mr. Avery, which we obtained when on a visit to Syracuse last fall, and saw the whole in operation.

The Engine, that is, the shaft and arms, weigh, as I learn, only 15 lbs.; the arms from centre of shaft to their ends are 18 inches, and in their revolutions describe a circle of 9 feet 5 inches in circumference; the two apertures at the end of the arms are equal to the eighth part of a superficial inch, and under a pressure of 80 lbs. to the square inch, will balance a weight of 10 lbs. From some experiments made, it is estimated to carry a load of 8 pounds through a space of 37,666 feet per minute. The boiler has 69 feet surface exposed to the fire, and consumes daily ½ a cord of soft dry wood.

There is in the establishment the following machines in operation, viz: 2 large Engine Lathes; 2 small do. do.; 2 Hand Lathes; 1 Boring Mill for boring Cylinders; 2 Drilling Lathes; 1 Grindstone; 1 Mill for grinding Coal; 2 Bellows, 40 double strokes each per minute, which will force 580 cubic feet of air per minute, under a pressure of 1½ lbs. per square inch.

The Engine had been in operation about 18 months, during which period it did not stop one hour in consequence of the operating part being out of order.

We hope, and expect, soon to be able to exhibit one of these Engines in operation, in printing the *Railroad Journal, and both sides of the sheet,* at the same time, or before it comes from the press—and shall be happy to show it to our subscribers, and others (of course we mean those WHO PAY IN ADVANCE,) and do us the favor to call about the first of May next.

The NEW-YORK AND ERIE RAILROAD bill, we regret to say, has been defeated. The cause *why*, and the means *how*, it has been done, we, for the present, shall not refer to. We may, however, be permitted to say that the opposition has not arisen from a spirit of liberal enterprise, or from enlarged views of the importance of securing to our State the immense transit duty upon the Western business. We shall, ere long, refer again to the subject, and in the mean time shall endeavor to obtain, for publication, a full report of the debate upon the subject.

DR. CHURCH.—The attention of many persons was attracted on Saturday to Dr. Church's beautiful steam-engine, which was running on the Covington road. The ground run over was six miles out and six home; and, notwithstanding the roads were in the heaviest possible state, in one of the trips four milestones (i. e. three miles) were passed in nine minutes; and two milestones were passed in the extraordinary short space of two minutes and a half.—[Birmingham Gazette.]

[From the London Mechanics' Magazine.]

The Undulating Railway—Mr. Badnall in Explanation.

Dear Sir: Your readers might naturally expect that I should have taken a much earlier opportunity, either of publishing the particulars of those experiments to which I so urgently invited their attention some time ago, or that I should have given some satisfactory explanation of my motive for withholding them. I am not, however, without a hope that this letter will prove a sufficient vindication of my conduct against any charge of neglect or wilful delay.

In my letter of the 20th August last (1834,) I stated that the Whiston Branch Railway was completed, but that our experiments were unavoidably delayed by the refusal of the Directors of the Liverpool and Manchester Railway to accommodate us by the loan of a suitable locomotive engine. At the same time, I intimated that, under such circumstances, I had no other resource than to endeavor to obtain an engine elsewhere, either on loan or hire.

With this view I made every necessary inquiry; but the only engine which I could hear of as being disengaged was the Manchester, which was built by Messrs. Galloway, Bowman and Glasgow; and though capable of dragging a considerable load, she was, from her particular construction, by no means adapted to the safe attainment of that velocity which could alone determine, on the Whiston line, the comparative superiority of an undulating or horizontal railway. I say upon the Whiston line, because the dip of the undulation was greater than I should ever recommend in practice; which may be judged of from the fact, that a loaded waggon, descending from the colliery by gravity alone, attained, after traversing about 500 yards, a velocity of upwards of 30 miles per hour.

Perceiving, however, that I had little, if any other, chance of trying immediate experiments, I consulted my partner, Mr. R. Stephenson, sen., on the subject, who, from being well acquainted with the capabilities of the engine, strongly objected to her being employed for the purpose in quesion, it being his opinion that, although a very powerful engine, when in good repair, the Manchester could not be trusted at those velocities which, upon the Whiston undulation, it would be necessary to attain. Mr. George Stephenson was also of a similar opinion.

Thus situated, I resolved on making a second application to the Directors of the Liverpool and Manchester Railway, offering, at the same time, a guarantee for payment of any damage which the engine might sustain, and explaining the difficulty in which I was placed, by having publicly announced the trial of my experiments; which announcement I was induced to make in consequence of a verbal communication which I previously had with Mr. Booth, and from which I had formed, it appears, erroneously, an opinion that, if a *guarantee were* given, there would be no longer an objection to the loan of an engine being granted me. To this second application I received the following reply:

"Railroad Office, Oct. 13, 1834.

"Dear Sir: I submitted to the Board your renewed application for the loan of a locomotive engine, for your proposed experiments on the Whiston Branch Railway, and am required to inform you that the Directors regret they cannot comply with your request. They gave the matter due consideration previous to their former decision, and they do not see reason to alter the determination they then came to. I am, dear Sir, yours most obediently,

"H. T. Booth.

"Richard Badnall, Esq."

Under these circumstances, and finding how impossible it was for me to obtain a suitable engine, and feeling how deeply I had committed myself in your pages, by a declaration that the perion was arrived when the whole question should be determined without further delay, I was resolved to adopt the only means which were left me of even partially fulfilling my pledge to the public. On the 21st October, I therefore called on Messrs. Galloway and Co., and solicited the loan of the Manchester engine for a few experiments, under the promise that the maximum velocity attained should not exceed from 20 to 25 miles per hour. With a liberality for which I feel greatly indebted, Messrs. G. and Co. granted my request, merely requiring a guarantee that I would return it in as good condition as I received it. On examining the state of the engine, it was found that the pistons required repacking; but as we could not expect to come to any very decided result, (the velocity being limited,) it was thought unnecessary to make any alteration for a first trial. On the 24th October, Mr. Robert Stephenson, sen., and Mr. Gill, accompained me, therefore, to Whiston; and the Railway Directors having accommodated us with empty waggons, we proceeded, after loading them with coal, to the trial of such experiments as we deemed compatible with safety, and likely to produce some data, whereon an opinion, pro. or con. could be formed.

It is necessary that I should here state, that the Whiston branch line was completed by Mr. M'Kenzie, under contract. That gentleman had previously given me a section, and although, upon that section, the summit levels were, no doubt, accurately defined, no intermediate levels had been denoted, either on the section or by stakes, on the ground itself; our only course, therefore, was to start from such parts of the descending line from the colliery, as would prevent our attaining a dangerous velocity, and to ascertain how far the train would rise on the opposite ascent; marking the starting and resting points, until future levels could be taken. Had the inclinations been regular, this precaution would have been unnecessary, as the measurement of the distances would, in such case, have determined the elevations. But the Whiston line forming one extensive undulation, varying according to the surface of the land, no criterion could be formed from such calculation.

An accident, which some time ago occurred to the Manchester engine, which left the rails, when descending the Sutton inclined plane, had unfortunately given her the character of an unsafe engine at high velocities; and it was evident that, on the present occasion, both the engineer and fireman were afraid of her. We, however, made eight experiments; Mr. Stephenson, myself, or Mr. Gill, accompanying the engine-man on each occasion. Our load was 80 tons; which, considering the condition of the engine, was an ample one, as she was proved to be only capable of drawing on that day about 15 tons up an inclination of 1 in 84, her steam being at from 40 to 50 lbs. on the inch pressure, though partially escaping between the piston and cylinder.

By these experiments, we were enabled to prove one very satisfactory circumstance—which was, that, notwithstanding the many disadvantages under which we labored, the train invariably rose to a higher summit than that from which she had previously started. For instance, in the first experiment, the train started from a given point, which was carefully denoted, and rose to a higher point on the opposite ascent, which was also denoted; the total distance being 760 yards—time, 2′ 35″. The power then being reversed, the train rose 34 yards higher than it had originally started from; again being reversed, the train rose 64 yards higher than on the first experiment; total distance 862¼ yards, time 2′ 26″. The power being again reversed, the train rose 38 yards higher than before—total distance 900 yards; when again reversed, the train rose 171 yards higher than before—total distance 1071 yards; and on the next occasion the total distance was 1167 yards.

On the 7th trial, no accurate result could be deduced, as some of the brakes were on the waggon wheels.

On the 8th experiment, the steam was brought down to 10 lbs. upon the inch; and I have every reason to believe, that when I am enabled to transmit to you a precise statement of the level from which it started and at which it rested, it will be found that the 80 tons were conveyed at that low pressure, very nearly, if not quite, from summit to summit.

Your readers will, I fear, be disappointed, and by no means satisfied with the rude statement which I now feel it imperative upon me to publish; but until I have a better opportunity of deciding the full merits of the question, I can only put them in possession of facts as they really occurred—this I have done myself. In justice to myself, however, and to the cause which I have conscientiously advocated, and still continue to advocate, I ask them, what could I have done more? or what, under existing circumstances, can I do? All men of science must, I am persuaded, sympathise in my regret, that experiments of such a nature should be delayed, when such delay could be so easily avoided; and with regard to any chance of a satisfactory conclusion being come to, by employing the Manchester engine, I need only refer to Messrs. Galloway & Co. themselves, who, I am sure, will bear testimony to her being in every point of view unsuitable to the purpose. She is, as before observed, an engine capable of drawing heavy loads at moderate velocities, but her many moving parts and general construction, render her altogether unfit for the trial in question. It was my wish to have sent with this letter a correct section of the Whitson branch, with the exact distances denoted thereon, which the train traversed at our recent experiments; but severe indisposition, which has, since the end of October, with the exception of a few days, confined me to the house, has prevented my paying that attention to the subject which I should otherwise have done. Wishing, however, to have an impartial survey of the line made, I wrote to Mr. Hall, of Warrington, begging him to prepare the necessary sections, showing the various levels, &c.; but he has not yet been able to undertake it, owing to his time being entirely occupied in completing a survey of the Grand Junction line, to deposit for Parliament: when the section alluded to is completed, I will forward you a copy of it. As a proof of the unfitness of the Manchester engine, for the trial of experiments on the Whitson line, I need only remark, that over a great portion of each undulation, her power was not only

ineffectual, but she was almost an incumbrance, owing to the loaded waggons attaining, by gravity, a greater velocity than she could effectually command in advance of them. This will easily be understood by those who consider the difference in the friction of a railway waggon, and a locomotive engine of her description. It also shows, that upon deep undulations, such as the Whitson line (where we have a fall of more than 30 feet in 500 yards), none but engines capable of sustaining an excess of speed above that which is produced by gravity, can be employed with *full effect*. Such was my view when, in allusion to the Whitson line (see page 214, No. 516), I said, "*the full effect of practical experiment must depend upon the momentum acquired by the combined forces of gravity and steam being safely and effectually maintained down the descending line of each undulation.*" For the same reason, also, I have before mentioned that, for general practical purposes, a dip of about 15 feet in a curve of 1,000 to 1,200 yards, would be the proportion I should most strongly recommend: though exceptions might, of course, be advantageously made, where the nature of the ground required it—especially in passing under or over cross-roads, canals, &c., or where the inclined planes would not be so deep or so extensive as to produce a dangerous velocity without the employment of the brakes—considering, as I do, that velocity on railways is always dangerous when the engine (her full power being employed) is not able to keep up a dragging influence on the succeeding carriages, or, if behind the train, a propelling influence on the carriages in advance.

So convinced did I feel that no further impediment would be thrown in the way of a full and impartial trial of the undulating railway theory at Whiston, that at the meeting of the British Association at Edinburgh, in September last, I as publicly announced my intention of immediately bringing the question to issue, as I had previously done in your pages. I hope, therefore, I shall not be accused of any disrespect to your readers, to yourself, or to the public at large, for a breach of engagement which it has been entirely out of my power, for the present, to obviate. I am, Sir,

Yours most respectfully,

RICH. BADNALL.

Farm-hill, near Douglas, Isle-of-Man,
Dec. 31, 1834.

I take the earliest opportunity of laying before the readers of the Journal Mr. Mills' Report of his survey of the route for the Rochester and Olean Canal. A part only is given in this, and it will be continued in the next number.

Report of Frederick C. Mills, Engineer, to the Honorable the Canal Commissioners of the State of New-York.

GENTLEMEN—

In compliance with instructions received from your Board, also from Jonas Earll, jr., acting Commissioner, and in accordance with the "Act, passed April 30th, 1834," I have made a survey and examination for a navigable canal "from Rochester up the Genesee valley to Olean on the Allegany," and also for "a side cut from the village of Dansville, down the Canascraga Creek, to the aforesaid canal, at or near Mount Morris," and very respectfully submit the result of my examinations in the following report, illustrated by the requisite maps, profiles, and plans.

In examining the country, embracing all the routes possessing claims to consideration (within the provisions of the act), I have been ably assisted by Henry Stanley Dexter and J. Clements Stocker, and feel bound to acknowledge my obligation, for the intelligent and assiduous performance of the several duties assigned them; I also received material aid from the result of former surveys, and from residents, who for some time have been alive and thoughtful on the subject.

Having learned that the principal difficulties on the route were south of Mount Morris, and that the most important were the slide banks on the Genesee River, above Portageville; the pass round the falls of the Genesee, in the town of Nunda; the summit and the amount of lockage thrown together at the village of Mount Morris; my attention was early directed to those points, and before making a permanent location of any portion of the main line, and with the hope that I might find a route which would avoid the greatest part of these difficulties, I made my examinations upon an extended and liberal scale, and after traversing much of the country on the range of high grounds, forming the dividing ridge between the waters that flow into the Ohio on the south, and Lake Ontario on the north, I was fully persuaded that the Oil and Black Creek summit presented the most favorable point of connection with the Genesee and Allegany. In the atlas accompanying this report, to which reference will be made, you will find, first, a general map of the country from Olean to Rochester, including the surveys of Lime, Beaver, Mud, and Fish Lakes, in the north part of Cattarraugus county.

Secondly, a map upon an enlarged scale, upon which I have delineated the profiles of all the different routes.

Thirdly, plans of locks, aqueducts, culverts, bridges, &c. In addition to which, I have executed in a condensed form and annexed to this report, a general map of the country in the vicinity of the canal route, on a scale of 2¼ miles to the inch.

The line which I have selected as the basis of my estimates, has been located with unusual care. It commences near the boathouse on the level of the Allegany River, at Olean Point; thence (to avoid high lands) the line winds round the easterly side of the village of Hamilton, following up the Olean Creek valley, upon the west side, over very favorable grounds for the construction of a canal, to the junction of the Ischua feeder with the summit level, and is 9¼ miles in length from Olean Point.

Estimated cost, $109,619.87.

Upon this portion of the route I have located 10 levels, varying from 4.55 chains to 3 miles 46 chains in length, 9 locks of 8 feet, and 1 of 7 feet, 1 culvert, 18 bridges, 3 waste-weirs, and 1 wooden aqueduct, 60 feet long, on stone piers, in crossing the Ischua, about 50 chains north of Hinsdale.

If necessary, a feeder from Olean Creek may be added at a very small expense, about one mile below Hinsdale. The Olean is a very sluggish stream, formed by the union of the Ischua with Oil Creek at Hinsdale, flows through fertile alluvial flats, about half a mile wide, and 200 feet below the tops of the hills on either side. From the summit level, there is a descent to the Allegany River at the confluence of Olean Creek, of 79 feet, and at the boathouse (37 chains below) of 80½ feet.

SUMMIT LEVEL.

This level commences on E. Wood's land, and following up the Oil Creek valley, through parts of the towns of Hinsdale, Cuba, and Haight, terminates on the head waters of Black Creek, about 4 miles 51 chains from the village of Cuba. On this summit, between the Genesee and the Allegany, a little east of Cady & Baldwin's Mills, there is a swamp of about two miles in length, principally covered with timber, the waters of which drain both ways, forming tributaries to Oil and Black Creeks. (Deepest cut on the summit, 12 feet.) From Cady's Mill, the line was carried down on the north side of Oil Creek valley, to the first lock, descending south near Mr. Wood's, where, from a feeder of 2¾ miles in length, the whole of Ischua Creek can be received into the summit; 3 waste-weirs, 11 farm and 6 road bridges, will be required.

Cost of summit level, $61,563.22.

The summit pond might be extended down either side of the creek with facility, obtaining generally a choice of cut without running much upon the face of the steep side hill; and on first travelling over the ground (having in view the accommodation of villages on the line), I thought most favorably of the south side; but on a more minute examination, found that the expense would be materially increased, owing to an additional aqueduct, and very high and long embankment necessary for conducting the Ischua feeder over Oil Creek valley, at which point the surface of the creek is 32.65 feet below bottom.

On Oil and Ischua Creeks, there are 5 saw mills, 2 carding machines, and 2 grist mills, which will lose all their water by the canal in the dry season. Six saw mills and one grist mill on Olean Creek will sustain a proportionable loss of water during the same season. It is supposed, however, that the damage (if any) will be small, inasmuch as the saw mills are seldom run, except in the spring and fall, when there is an abundance of water.*

The summit will be eleven and a half miles in length, is 79 feet above the Allegany at Olean Point, 978 feet above the Erie Canal at Rochester, and 1,484 feet above low tides.

A passage here from the Ohio valley to the Genesee valley is less elevated than any other passage that has been examined, except the route up the Conewango valley, via Lake Erie, Buffalo, and the Erie Canal.

According to Mr. Whippo's survey, this summit is 724 feet above Lake Erie, and as L. Erie is 568 feet above the ocean, it results that the said summit stands 1,292 feet above tides; 192 feet lower than that of Oil and Black Creeks.

It is, however, observable, that in all the examinations that have been made from the Ohio valley, either to the Potomac or the Susquehannah valley, no passage has been found so low as the one I have adopted, by some hundred feet.

That of Blair's Gap summit on the Pennsylvania Canal route, is 2,291 feet, and that of the Chesapeake and Ohio Canal, 1,998 above the Atlantic. To pass the latter, a tunnel of 4 miles in length will be required. The former is effected by a railroad 36.69 miles in length (from Jonnstown to Hollidaysburgh), overcoming an aggregate ascent and descent of 2,570 feet; 1,398 of which is on the eastern, and 1,179 on the western side of the mountain.

From the summit, the line takes a northeasterly direction down the valley of Black

* Smith's mills will sustain serious injury, and an appraisal of damages will be necessary.

Creek. For about 5 miles (except some few points where the high bank approaches the creek abruptly, which points may be avoided by turning the channel of the creek at a very small expense,) a favorable route can be obtained over a regular surface, gradually descending at the rate of 12 feet to the mile to Bruce's mill, where a rapid fall takes place. In 2¼ miles, which brings us to the point of leaving Black Creek valley, there are 11 locks of 8 feet each.

Lock No. 20, is at the head of this rapid descent, in a narrow defile caused by the sudden approach of high rocky banks on either side of the creek. In passing this point considerable rock excavation will occur, owing to the necessity of cutting the body of the canal into the steep side hill for about 20 chains, on the north side of the creek. The embankment must be protected by a stone wall. The rock is principally gray sandstone, and easily quarried. It is fine building stone, and will be useful in the construction of locks.

Upon this rapid, Willard Bruce, the proprietor, has erected a saw mill, fulling mill, and grist mill, with two run of stones, which, together with 100 acres of land, is valued at $2,800.

He has 12 feet head and fall, and water sufficient in the dryest season to turn one run of stones. The mills will be injured by the canal, and be a subject of claim for damages; but the land will be enhanced in value.

Between the mouths of Black and Crawford Creeks on the Genesee River, there are several slide banks of a serious character, which are entirely avoided in the present location. At the point of leaving Black Creek, about one mile above its junction with the river, is a favorable valley putting thro' the high grounds, which bound Black Creek valley on the north, through which we pass (2 miles), in a very direct line, coming out upon the Genesee River one fourth of a mile south of Ketchum's, near Crawford's Creek, by which we not only avoid the slides, but save nearly two miles in distance. Here, from a feeder of 20 chains in length, and a dam of small elevation, the whole of the Genesee River may be received into the canal.

The distance from the summit to this point is 9½ miles—the descent 242 feet. To overcome this fall, it will be necessary to construct 27 locks of 8 feet lift, 2 of 7 feet, and 2 of 6 feet.

There are 3 culverts, 5 waste-weirs, 6 road and 14 farm bridges, required on this portion of the route. Estimated cost, $223,052.35.

Following down the river from this to Portageville, 20 miles, the valley is often wide, free from high, precipitous, rocky shores, and (with the exception of some obstructions by slip banks of clay) presents unusual facilities for the construction of a canal, and (as will be seen by reference to the estimates of each section in detail) bears a remarkable comparison with the same distance on the east side of the Genesee River from Mount Morris to Rochester, lockage excepted.

The principal, and indeed the only serious slide bank we have to encounter, is on section No. 38. It is a high steep bank, and embraces several acres of ground. At this point (as seen on the map) the Genesee runs nearly at right angles from the east to the west side of the valley, and after washing the base of the slip bank, continually increasing its depth (now 20 feet), as well as increasing the tendency of the bank to slide, it makes off again across the valley, touching the eastern hill within 22 chains of the point of leaving it.

To secure against these slides is difficult; great disasters are often occasioned by them, and in order to get by this point with safety to the canal, I propose changing the bed of the river, and constructing the towing path on the opposite bank of the old channel.

Near the hill on the east side of the valley, is a natural ravine, through which, by the erection of a strong dam across the river, and cutting down a narrow ridge 5½ chains in length, the Genesee River may be turned at comparatively small expense, which is the most feasible plan of avoiding all danger from the slide.

The Genesee sends forward 5,007 cubic feet of water per minute at the point proposed to take it into the canal, as a feeder above Crawford Creek.

From Crawford Creek to Portage we cross Caneadea, Cold and West Koy Creeks, all fine permanent streams, discharging in the dryest season 2,800 cubic feet of water per minute, which may be received into the canal with facility.

The least expensive mode of crossing these streams would be by the construction of dams with wooden towing paths; but as the crossing of ponds of this description is often attended with great inconvenience from the strong current in the time of freshets, I prefer, and have adopted, the more expensive plan of crossing in aqueducts, and introducing the several streams by short feeders, with appropriate bulkheads.

In case it should be deemed necessary hereafter, the Genesee River may be taken in at several points between Cold and West Koy Creeks.

On this 21 miles and 30 chains, there will be 3 aqueducts with wooden trunks, 1 with stone arches in cement, 14 culverts, 3 waste-weirs, and 20 road and 35 farm bridges.

PORTAGE HILLS.

At Portage the continued high grounds which come down from the east and west sides of the river, and enclose the valley and fertile flats above the falls, are separated only by a deep chasm through which the river passes, with high perpendicular banks on both sides, descending 274 feet by 3 successive falls in the distance of two miles.

The perpendicular banks generally are of aluminous shale or gray wacke, with occasional strata of sand rock of a texture sufficiently hard for building purposes, and at some few points between the second and third falls, the banks are 400 feet above the level of the river.

Judge Geddes, in his report of 1826, proposed passing this point by going round in the bed of the river. Mr. Jones' plan was to tunnel the hill at a favorable point. To pass this ridge, by either of those routes, appeared exceedingly difficult and expensive. Different plans were proposed, various routes suggested, and many examinations made on both sides of the river, with the view of finding some one more feasible, but without success.

Finding no alternative, but the adoption of one or other of those routes, and having some doubts which was the most favorable, I deemed it advisable to make a minute survey and estimate of both, which has resulted in favor of the river route, although it increases the distance above the one through the tunnel, nearly 1¾ mile, the river at this place making a long circuit round the hill.

The estimated cost of the tunnel route upon the first plan, (which I would recommend) is a fraction less than that of the river route; but the hazard of encountering unforeseen difficulties, in tunnelling through a hill where quicksand occurs, has induced me to give the preference to the latter route.

The canal crosses the river at Portage by an aqueduct 280 feet long, and to maintain the best elevation for passing the ridge on either route, it must be 36 feet above the bed of the stream. The trunk to be of wood on stone abutments, and piers 42 feet apart laid in hydraulic cement. The site for an aqueduct is a very favorable one. The bed of the river is a flat horizontal rock, with high banks, and stone in abundance may be quarried near the spot.

In the village of Portageville the line will run west of the main street, crossing it at a point where two buildings only obstruct the passage, if the line should be located on the river route; but should the tunnel route be adopted, it will be necessary to remove four buildings.

The lines diverge at Portageville, the one pursuing an easterly direction for 65 chains, over the upland slope near the foot of the hill, passes the ridge by a tunnel 26 chains in length; the other following round by the river, runs under a steep bank or precipitous hill, requiring a very high embankment, principally formed in the bed of the stream, and protected from the floods by a heavy stone wall, until it gains the table or upland slope at the end of section 52, immediately below the first falls.

About 50 chains further on, another spur of the hill comes out abruptly to the deep defile, in which runs the Genesee river, not less than 380 feet below the top of the bank.

After passing this ridge, which rises above the bottom of the canal 98 feet to its summit, and is 22 chains through, the hill suddenly recedes to the east, and leaving the river's bank, the line follows along the north slope of Portage ridge, over tables of very favorable elevation, to the north end of the tunnel, which is 2 miles and 68½ chains from Portageville.

In making the survey with a view to a line through the hill, it was ascertained that the summit of the ridge was 204 feet above bottom, and that the tunnel would not exceed 26 chains in length.

The soil or upper covering of the hill is of clay and gravelly loam, the hill steep at each end of the tunnel, with a valley below, offering great facilities for the deposite of surplus excavation. From the appearance of the rock upon the banks of the river, and in all the ledges of that vicinity, there were strong indications that the excavation for a large portion of the tunnel would be through rock lying in horizontal strata, easily broken up, yet sufficiently hard to support the archway without the aid of masonry, and had it not been proved by subsequent examination, that the contrary was the fact, the superiority of this route would have been unquestionable.

To determine this point, and to show the character of the excavation in the interior, shafts were sunk on the slopes of the hill near the ends of the tunnel, where quicksand made its appearance in such quantities, as rendered it quite impracticable to sink the shafts to the level of the canal. It was still the opinion of some that rock would be found after passing the slopes of the hill. To put an end to all doubts that might arise upon the subject, I directed another shaft to be settled near the centre of the ridge, which was carried down through sand and gravel to within 20 feet of the

bottom line of the canal, at which point we again encountered quicksands.

To construct a work of this magnitude through such materials, would undoubtedly prove very expensive, and any estimate that can now be made of its cost, must in some degree be founded on conjecture, and of course liable to vary from the truth. However, for the purpose of comparison, I have estimated for a tunnel wide enough to pass two boats, the arch-way to be constructed of permanent stone masonry, with a wooden horse path, and in the following statement present the approximate cost, from the aqueduct to the north end of the tunnel.

Cost from aqueduct to south end of tunnel, - - -	$4,474 45
Total cost of tunnel, - -	140,106 52
Aggregate, - - - - -	$144,580 97

To pass the point of rocks or deep cut of 98 feet by the river route on section 53, two plans were proposed, one a thorough cut, the other a short tunnel of 16 chains in length. The line here is far enough from the margin of the gulf to insure the safety of the canal, and yet so near that the surplus materials may be conveniently discharged into the bed of the river, which will tend very much to diminish the expense on either plan.

The estimate for the tunnel is $14,240 less than cutting down the hill, and should this plan be adopted, (which I would recommend,) the whole cost for the river route will be $163,232 49, being $18 651 52 more than via the long tunnel.

In the detailed estimate marked H, for the eastern or long tunnel, will also be found an estimate for a tunnel of less width, calculated to pass only one boat at a time, the cost of which is $56,228 57 less than the other; and should this mode of construction be deemed suitable for a work of such magnitude, this may possibly be the cheapest way of overcoming the obstacles at Portage.

From Portage tunnel to the Dansville side cut at Mount Morris, the descent is 549 feet.

[*To be Continued.*]

The annexed extract from Mr. Johnson's Report gives a comparative statement of the distance, lockage, and cost of transportation from the Ohio River to New-York, on three different routes.

Routes of communication to the Ohio Valley.

In order to exhibit the comparative advantages of the different routes proposed and in use from the Atlantic cities to the Ohio River, I subjoin the following account of the distances, lockage, cost, and time of transportation on them. It will be seen by a reference to these statements, that the expense of transportation upon the Allegany River and Pennsylvania Canals, will preclude the possibility of the trade of the Rochester and Olean Canal being drawn through that channel, or through any other injurious to the interests of this State.

1st. To New-York from Portsmouth, via the Ohio Canal, Lake Erie, and the Erie Canal.

	Miles.	Lockage in feet.
Ohio Canal,	308	1,207
Lake Erie,	190	
Erie Canal,	363	689
Hudson River,	145	
	1,006	1,896

2d. To Philadelphia from Pittsburgh, via Portage Railway and the Pennsylvania, Union, and Schuylkill Canals.

	Miles.	Lockage.
From Pittsburgh to Johnstown,	105	474
Portage Railroad,	36¾	2,570
Pennsylvania Canal,	153	646
Union Canal,	80	503½
Schuylkill Canal,	60	182¼
	434¾	4,345¾

Thence to New-York as follows:

	Miles.	Lockage.
Delaware River,	30	
Delaware and Raritan Canal,	43	112
Raritan River and Staten Island Sound,	40	
	113	112
Add from Pittsburgh to Philadelphia, as above,	434¾	4,345¾
Total from Pittsburgh to New-York,	547¾	4,457¾

To New-York from Olean, via Rochester and Olean Canal, Erie Canal, and Hudson River.

	Miles.	Lockage.
Rochester and Olean Canal,	105⅛	1,057
Erie Canal,	270	630
Albany to New-York,	145	
Total,	520⅛	1,687

Chesapeake and Ohio Canal.

From Wheeling to Georgetown,	310	3,153
From Pittsburgh to Georgetown,	341¾	3,215

From Pittsburgh to New-York, via the Chesapeake and Ohio, the proposed Maryland, the Delaware and Chesapeake, and the Delaware and Raritan Canals, will be 615 miles. Lockage 3,661 feet, which, reduced to a level, will be=146.44×615=761.44 miles total distance.

From the above statement it appears that the length of the route now in use from the City of New-York to the Ohio River, through this State, is 1,006 miles, with a lockage of 1,896 feet; which, considering 25 feet of lockage equal to a mile in distance (including unavoidable detentions at the locks), is equivalent to a distance of 1,081.85 miles, of which 335 are steamboat navigation. By the route which is the subject of the present report, the distance from Olean to the City of New-York will be 520⅛ miles, and a lockage of 1,687 feet, making in all 587⅞ miles, of which 145 miles is steamboat navigation. From Olean to Pittsburgh by the river, is 280 miles, and there is an average fall of 2¼ feet per mile. The transportation from Pittsburgh to Philadelphia is effected by canal, with the exception of 36¾ miles of railroad over the Allegany Mountains. The distance is 434¾ miles, in which a rise and fall of 4,345¾ feet is overcome by means of locks and inclined planes, with stationary power, equal in all from Philadelphia to Pittsburgh to 608.58 miles, and from New-York to Pittsburgh to 726 miles, including lockage.

Summary of the length of the preceding routes:

	Miles.
From Portsmouth, on the Ohio River, to New-York, via Erie and Ohio Canals, (including lockage,)	1,081.85
From Pittsburgh to New-York, via Rochester and Olean Canal and Erie Canal,	867.60
From Pittsburgh to New-York, via Pennsylvania and Delaware and Raritan Canals,	726.00
From Pittsburgh to New-York, via Chesapeake and Ohio, Maryland, Delaware, and Raritan Canals, &c.,	761.44

The following calculations of the cost of transportation upon different canals are founded upon information received from gentlemen engaged in the forwarding business, and upon the Erie and Ohio Canals, conform to the tariff agreed to at the meeting of the forwarding merchants at Buffalo, on the 9th inst.

The cost of transportation from New-York to Portsmouth, on the Ohio, by the Erie and Ohio Canals, is as follows, viz.:

Heavy merchandize, per 100 lbs.,	$1 86
Light " "	2 00
Returning.	
Flour, per barrel,	1 80
Whiskey, pork, butter, beef, lard, &c., per 100 lbs.,	0 90

The average time required to make a trip to New-York, is from 18 to 24 days.

The cost of transportation from the City of Philadelphia, by the Pennsylvania improvements, is as follows:

Heavy merchandize, per 100 lbs.,	$1 25
Light " "	1 50
Returning.	
On produce, (to Philadelphia,)	0 70

Price of transportation from Philadelphia to New-York:

On light goods or merchandize, via canal,	0 25
On heavy "	0 12
Returning.	
On produce,	0 10

Making the total cost of transportation from the City of New-York to Pittsburgh, as follows, viz.:

Heavy merchandize, per 100 lbs.,	$1 37
Light " "	1 75
Returning.	
Produce,	0 80

The average time required to make a trip to Philadelphia, is 15 days, and it requires about the same time to return: but to get goods from New-York by this channel, I am informed by Judge Griswold E. Warner, (a gentleman residing in Pittsburgh, requires from 20 to 25 days, some delay being unavoidable in making an extra transshipment upon the Schuylkill River into the canal boats.

The probable expense of transportation from New-York to Olean, via the Rochester and Olean Canal, would be as follows:

On heavy goods, per 100 lbs.,	$0 96
On light " "	1 07
Returning.	
On produce, per 100 lbs.,	0 55

PRICES OF RAILROAD STOCKS,

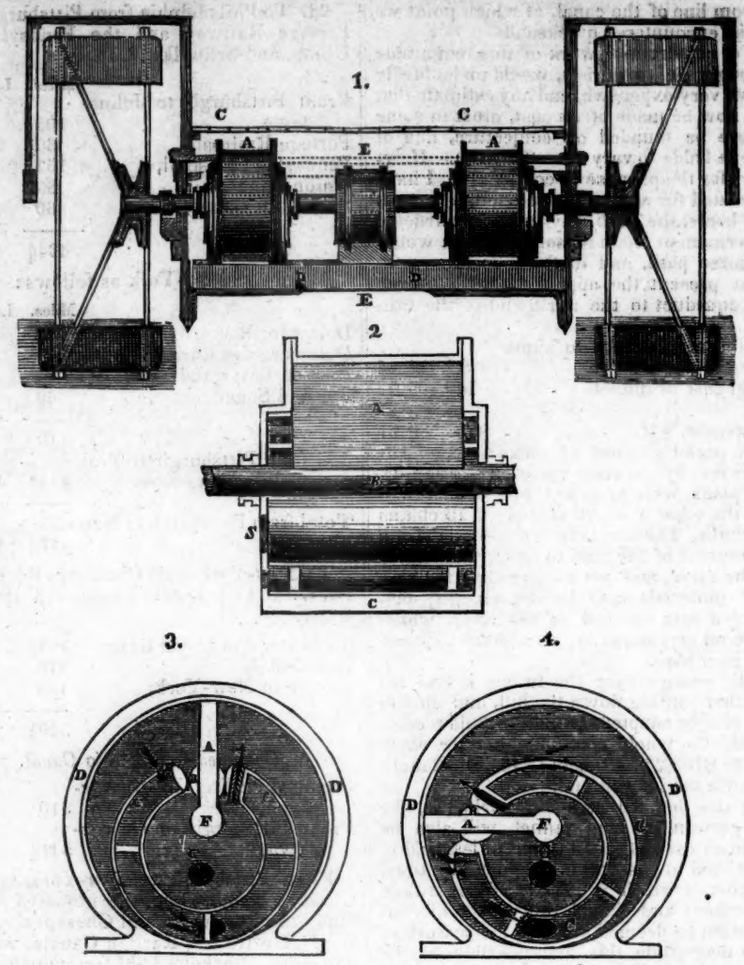
At the New-York Stock and Exchange Board,

MARCH 27, 1835.

	Par.	PER CENT. Ask.	Offer.
Mohawk and Hudson.....	100	117½	117½
Paterson.....	50	103	103
Saratoga.....	—	106½	106
Harlem.....	—	80	78
Boston and Providence....	100	115½	114
New-Jersey Railroad and Transportation Line...	100	115	115
Camden and Amboy.....	100	146	—
Providence and Stonington.	100	142	—
Boston and Worcester.....	—	103	103
Philadelphia and Trenton..	100	96	93
Utica and Schenectady....	100	117	117

[From the London Mechanics' Magazine.]

THE EARL OF DUNDONALD'S REVOLVING STEAM ENGINE.—The engravings on the preceding page exhibit the construction of a rotary engine, which has been recently patented by the Earl of Dundonald, and the manner of its application to the propulsion of vessels. The Earl himself describes it in a circular, with a copy of which we have been favored, as surpassing in efficiency every thing of the kind hitherto produced—as being, in fact, so perfect, that perfection can no farther go. "The cause," says his lordship, "of the uniform failure in the construction of rotary engines, has been the great difficulty of obtaining, within the machine, a base of resistance on which the steam might act in propelling the moveable piston. The means by which this has been hitherto attempted, have consisted of a variety of very imperfect mechanical contrivances, all of which have proved quite inadequate to the successful employment of this sort of engine; but in the REVOLVING ENGINE now offered to notice, this great difficulty is *completely overcome*. This engine is constructed on a principle that gives *the most perfect fulcrum* or resisting base, in a manner *that leaves nothing on this head to be desired*—indeed, it is as perfect, and nearly as simple, as the fixed cover or bottom of the cylinder of the ordinary reciprocating engine. The great and paramount difficulty of obtaining a suitable fulcrum being *thus completely overcome*, all other obstacles to the employing of this sort of engine at once disappear; in truth, from the result of numerous trials, during two years' experience, it may be affirmed that this engine is constructed in such a manner as to render it *equally perfect and efficient as the best reciprocating engine!*" Nor does the perfection of this engine rest on the noble lord's own testimony; for that very ingenious engineer, Mr. Alex. Gordon, in his "Treatise on Elemental Locomotion," 2d edition, 1834, speaks of it in the following *equally encomiastic terms*: "Of the many rotary engines none have stood the test of long trial; and, indeed, as yet there is none in *practical use*, if we except that of the Earl of Dundonald, (the gallant and ingenious Lord Cochrane,) which bids *fair to rival the best reciprocating engine*. * * The cause of uniform failure of other ingenious persons, in the construction of rotary engines, has been the difficulty of obtaining, within the machine, a base of resistance on which the steam might act in propelling the moveable piston. The means by which this has hitherto been attempted, have consisted of a variety of very imperfect mechanical contrivances, all of which have proved quite inadequate to the successful employment of this sort of engine; but in the REVOLVING ENGINE now under notice, *this difficulty is completely overcome*. This engine is constructed on a principle, that *gives a perfect fulcrum*, or resisting base; indeed, it is as perfect, and nearly as simple, as the fixed covers or heads of the cylinder in ordinary reciprocating engines, &c. &c.



The great and paramount difficulty of obtaining a suitable fulcrum having been *thus completely overcome*, all other obstacles to the employing of this sort of engine at once disappear: in truth, from the result of numerous trials, during two years' experience, this engine is constructed in such a manner as to render it *equally perfect and efficient as a reciprocating engine.*". 'Equally encomiastic terms!' we think we hear the reader exclaim—'Why they are literally the same terms—his lordship's own words over again.' So, gentle reader, in truth they are. What Lord Dundonald says, and all he says of his engine, Mr. Alex. Gordon says, and little more; not a tittle of difference is there, in three of the four sentences we have quoted from Mr. Gordon's book, save *just as much* as might serve to make it appear, [no quotation marks being used,] that Mr. Gordon's words are his own words, and not merely a parrot-like repetition of those of his lordship. But though the identity of the language employed in the two quotations be certainly very singular, it is, after all, but an identity in language, not *necessarily* extending to the matter of the extracts themselves. Mr. Gordon may have felt unable to say what he honestly thought of the engine in question, in better terms than those previously used by the noble inventor himself; and if so, can he be to blame that he made use of the same terms over again? Obviously not. His lordship's patent covers only the engine itself—not the words employed by his lordship to describe its perfections. There could be no piracy in the case—only *a little convenient appropriation*. But, it may be said, if Mr. Gordon was driven by such a sense of fitness to employ the same words as his lordship's, he might at least have had the candor to acknowledge that they were the same, in order that his readers might be enabled to judge for themselves whether they are actually so *fit*—so peculiarly appropriate—that no person desiring to give a *discriminating, independent, and impartial* opinion of the invention, could employ any better; or whether the identity is but such as might be expected, where a person has lent himself to puff the pretensions of another, without any care for truth, honor, or reputation. We confess there is something in this; and, therefore, it is that we have done our best to make up for Mr. Gordon's *not* very candid omission. No one—of *our* readers at least—will now be at any loss to determine for himself the degree of weight which belongs to Mr. Gordon's opinion in the present instance. Mr. Gordon, it will be observed, goes on one material point considerably further than the Earl himself. The Earl speaks only of "numerous trials" of his

engine; Mr. Gordon talks of its being "in *practical use*;" and the words are put in the original, as here, in italics, to impress them more forcibly on the minds of the reader. The obvious intention of the phrase used by Mr. Gordon is to make the public believe that Lord Dundonald's engine has not only had many "trials" by his lordship himself, but has been thought so well of by others—by practical persons, requiring the use of a steam-engine for practical purposes,—that they have had engines made on this plan, in preference to reciprocating engines, and are now actually using them with great advantage. But what truth is there in this? What "practical use" can Mr. Gordon specify? Can he name a single vessel—not a "trial" one merely—where a marine engine, on his lordship's plan, is employed? Or refer us to a single mill or manufactory, where a revolving-engine of Lord Dundonald's is employed as the moving power? We are greatly misinformed, if it is in his power to do any thing of the kind.

It is not, certainly, as an engine in "practical use," nor even as one very likely to be so, that we now bring it under the notice of our readers. We think by no means so highly of it as either his lordship or his echo, Mr. Gordon. We give a place to the present description of it in our pages, for two reasons, very distinct from admiration: first, because of the considerable talk there is about it, owing partly to the celebrity, (for other things than machine inventing,) of the noble inventor, and partly to his prodigiously confident representations of its amazing capabilities; second, because if we are wrong in the opinion we have formed of it, (which not being persons of such infallible stuff as his lordship, nor of such ready faith as Mr. Gordon, we admit to be a possible case)—if it has really left "nothing to be desired," in the way of producing an effective rotary engine—it were a thousand pities that the knowledge of an invention, calculated to confer so much benefit on the mechanical world, and to save so much trouble and mortification to hundreds of ingenious mechanics, who are now occupied with the solution of that problem, of *which it is said to furnish the best possible practical solution*, should not be as speedily and as widely diffused as possible.

Fig. 1 is a representation, copied from Lord Dundonald's circular, of two engines of this description applied to the propulsion of a vessel. A A are the engines; B the air-pump; C C the deck; D a strong beam on which the engines and air-pump rest; E the space for the boiler. Figs. 2, 3, and 4, are sectional views of one of the engines, exhibiting, under different aspects, the peculiar mode of construction by which Lord D. flatters himself he has "completely overcome" the "great difficulty" in the case. We copy these views from Mr. Gordon's book; and shall copy also from it the following explanatory details:

"Fig. 2 is a longitudinal section, with the blade or piston A in one part of its course (a lunette space). Fig. 3 is a cross section, showing the blade or piston A. Fig. 4 shows the piston in a different part of the lunette space; F is a fixed centre or axle, upon which the piston A turns—the radius sweeps round the inside of the larger circle D D; G is the *mathematical* centre (for there is no axis through the centre of the inner cylinder C C C, &c.) around which the cylinder C C turns. The piston A works in a ball-cock or stuffing at B; and in traversing the lunette space formed between D D and C C C, is obliged to slide out and in through B. At one time this piston A will have a larger portion protruding from C C C, as in fig. 3; and at another time it will protrude less, as in fig. 5. At one time, in each revolution, A will be at a point where there is no part protruding. The piston *crawls* out of and into the cylinder C C C (through B) constantly. The steam from the boiler is admitted through the hole S, and rushes along the opening Y, in the direction of the small arrow: it cannot escape where the cylinders C and D are in contact, and therefore it forces round the piston A in a contrary direction. The other part of the lunette space *evacuates itself* in the direction of the double arrows. Of course the power of the engine is always varying, because the surface of the piston is always either increasing or diminishing. To compensate for *this* variation, two cylinders are used; the one to be in full activity, while the other is passing the dead point. As the one decreases the other increases; and thus a continuous and rotatory motion is maintained, which can be applied in every case where the reciprocating engine is used for rotatory purposes."

We cannot say that this description of Mr. Gordon's is very clear or intelligible; it is, in truth, extremely loose and confused—in some parts, indeed, nonsensical. However, such as it is, we must leave our readers to digest it as they best can. It has all the appearance of being done to order, like the encomiums we before quoted from the same pen; and it would be presumptuous in us to attempt to offer any thing in the way of explanation or emendation. The engravings, at least, are plain enough; and, with their help, the intelligent reader will, we dare say, be able to arrive at a tolerably clear notion of all that is meant by *mathematical centres*, *crawling pistons*, *spaces evacuating themselves*, &c. &c.

Mr. Gordon adds, that "by some recent alterations in the steam-ways, the patentee has been enabled to use two pistons in one cylinder, and thus to save weight to a still greater extent. By this new arrangement, one piston increases in power in proportion as the other diminishes in power."

Supposing the engine to be as efficient as it is represented to be, the following are, according to Lord Dundonald, the principal advantages to be expected from its adoption:

"1st. It will not occupy one-sixth part of the space required for the reciprocating engine.

"2d. It may be placed so low in a vessel as to be quite out of the reach of gunshot; or the cylinder may be made shot proof, without the slightest disadvantage.

"3d. The revolving engine does not require any valve or slide, consequently there is no waste of steam thereby; neither is there any loss, as in the space left at the top and bottom of the cylinders or reciprocating engines.

"4th. There is much less friction than arises from the sum of all the bearings required to convert the rectilineal force of the common engine to circular motion.

"5th. There are no beams, cranks, side rods, connecting rods, parallel motions, levers, slide valves, eccentrics, &c., with their nicely adjusted joints and bearings; therefore the revolving engine is not liable, even in one-tenth degree, to the accidents and hindrances of other engines.

"6th. The working of the revolving engine, in a steam-vessel, is much more pleasant to passengers, by the absence of tremor, now occasioned by the alternating of a ponderous mass of moving matter, twice in every stroke of the engine.

"7th. The revolving engine being contained within a cylinder, may be completely finished and united in the manufactory; and may be lowered into a vessel, and fixed in fewer days than weeks are now required to erect and adjust a reciprocating engine.

"8th. As the moving parts of the revolving engine pursue their course in perfect circles (without stop or hindrance) this engine is capable of progressive acceleration, until the work performed equals the pressure of steam on the vacuum, or on the atmosphere: an advantage which the reciprocating engine does not possess.

"9th. The revolving engine is completely under the control of the commander of a vessel, without the intervention of an engineer; simply by connecting a rod or line, from his usual station on deck, to a cock, by which he can set the engine going, stop, or reverse its motion.

"10th. The diminished bulk, weight, and absence of tremor, add to the capacity, buoyancy, velocity, and durability of vessels in which the revolving engine is placed.

"11th. This engine can, with equal aptitude, be constructed to propel the largest vessel, or the smallest boat; to pump the ship, weigh the anchor, embark or discharge the cargo, and perform the most laborious duties of a crew.

"12th. It is peculiarly adapted to locomotion on land; there being, in the revolving engine, no part requiring to be oiled,* exposed to the adhesion of dust or grit, now so destructive to the rods, joints, and bearings of locomotive engines.

* "The offensive smell, so much complained of in steam-vessels, arising from the decomposition of grease and animal oils, spilt in lubricating the bearings of the numerous parts in motion, may be greatly diminished, and, with care, may be wholly avoided where the revolving engine is used."

"13th. The revolving engine, from the solidity of its parts, the simplicity of its construction, and the uniformity of its impulsive action, can be kept in repair at less expense than the reciprocating engine; and, if used for mines or manufactories, an engine-house is not required; a simple shed or covering being sufficient.

"Lastly. One quarter of the capacity of ordinary steam-vessels (or half the engine room) is restored to useful purposes; whilst the vessel can be navigated by the same number of engineers and seamen, and with the same consumption of fuel. Thus the comparative cost of building the *useful* portion of a steam-vessel, and the expenses of all kinds, are diminished one-third; whilst the profit from an increased amount of cargo or passengers, or the facility of proceeding to more distant parts, is in the like ratio augmented."

[From the New-York American.]

Rejection of the Bill for Aiding in the Construction of the New York and Erie Railroad.

Since our notice of this subject on Monday, in which we gave an analysis of the final vote, we have been furnished with a statement of the vote in Committee of the whole, on the amendment proposed by Mr. *Sibley*. It was by this vote that the strength of the parties was shown and the fate of the bill decided. It was the object of this amendment, to remove all doubt as to the sufficiency of the security to be given by the Railroad company, before the issue of the stock which was to be loaned by the State. It provided, that when the Company had constructed and finished a single track of their Railway from the *Delaware and Hudson Canal*, to a point as far west as *Binghampton*, $500,000 of stock should be issued; when they had finished a single track from the point above mentioned, to a point as far west as *Elmira*, a further issue of like amount should be made; when they had extended the track as far west as *Olean*, a third half million, and when the remaining portion, extending to *Lake Erie* was completed, a like amount should be issued.

We are informed that it was understood by the members generally, that this amendment would be proposed, and many of the friends of the measure considered the adoption of these provisions essential to the success of the Bill. The amendment was rejected by a majority of 2 only, as will appear by the following statement:

For the amendment.		*Against it.*	
Allegany,	1	Albany,	3
Broome,	1	Cayuga,	3
Cattaraugus,	1	Clinton,	1
Cayuga,	1		
Chatauque,	2	Columbia,	3
Chenango,	2	Genessee,	1
Cortland,	2	Green,	1
Delaware,	2	Herkimer,	1
Dutchess,	2	Lewis,	1
Franklin,	1	Madison,	2
Genessee,	2	Montgomery,	3
Green,	1	New York,	4
Jefferson,	3	Oneida,	5
Livingston,	2	Onondaga,	4
Madison,	1	Oswego,	1
Monroe,	3	Otsego,	2
New York,	4	Queens,	1
Niagara,	1	Rensselaer,	2
Ontario,	3	Saratoga,	2
Orange,	2	Schenectady,	1
Orleans,	1	Schoharie,	2
Otsego,	2	Seneca,	1
Rockland,	1	St. Lawrence	2
Seneca,	1	Suffolk,	2
Steuben,	2	Washington,	2
Sullivan,	1	Wayne,	2
Tioga,	2	West Chester	3
Tompkins,	3		55
Warren,	1		
Washington,	1		
Yates,	1		
	53		

Immediately after this vote, three of those who voted for the amendment left the House, and four others, on subsequent motions joined the majority, which reduced the minority to 46.

Of the members who had gone to their homes, it is believed that one from Chenango, 1 from Erie, two from Dutchess, and two from Ulster, would have voted for the amendment, and for the bill, had they been present; and likewise several of those who were out of the house, probably on the supposition that no question would be taken at that sitting.

It will be observed that of the members who voted against the bill, thirty were from fourteen counties on and adjacent to the Erie Canal route; seven from four counties north of that route; thirteen from five counties east of Hudson River, (including Queens and Suffolk,) and five only from counties south of Albany, on the west side of the River.

Of the members who voted for the amendment, 41 were from twenty-five counties west of Hudson River, and south of, or intersected by, the Erie Canal; six from four counties north of the Canal; and six from two counties east of the River.

Supposing the four votes of members from this city against the amendment to have been so cast on account of their "pledge," it will appear that 25 counties supported the measure, 19 opposed it, and the votes of six were divided. If the four votes from this city were owing to the pledge, and not to any opposition to the bill, then a just estimate of the strength of the opposition requires that they should be deducted from the 55 votes above stated, which would reduce the number to 51, and leave a majority of two in favor of the measure. Add to this, six votes of absent members, above referred to, and the majority in favor of the claim of the Southern counties would be eight.

We ask attention to these facts, in order that our readers may be enabled to follow us, in the remarks which we propose from time to time to offer, in explanation of the great interests thus contemptuously disregarded by the Asembly—and of the motives for their course—which we mean thoroughly to probe, and hope to be enabled to lay bare—names, and manœuvres, equally.

AGRICULTURE,&c.

MEANS OF INCREASING THE PRODUCTIVE POWERS OF SOILS.—The means at our command of increasing the productive powers of soils may be comprehended under the general following heads:

1. Supplying to the soil those organic and earthy substances which may be required.

2. Altering its texture, depth and properties, by tillage and other means.

3. Changing its relation with respect to moisture.

4. Changing its relation with respect to temperature.

Vegetable and animal matters, in a decomposing state, appear to act in various ways, in increasing the productive powers of the soil. They improve its texture, and they may be supposed to increase its power to absorb and retain moisture: but above all, they supply that matter, which, in whatever form conveyed to the organs of plants, tends to nourish them. This matter being absorbed by the roots of plants, it must be supplied when exhausted.

Experience has in every age accordingly taught the husbandman to supply those substances to the soil; and the doing so forms one of the most important means at his command of maintaining or increasing its fertility.

Besides the animal and vegetable matter which is mixed or combined with the mineral part of the soil, and is essential to its productiveness, the mineral parts themselves, it has been seen, require to be mixed together in certain proportions, and in certain states of division, in order to produce the greatest degree of fertility.

Silica and alumina form the principal mineral part of the soil. If one or the other of these earths be in excess, the soil is defective in its composition. If the alumina prevails the soil is too adhesive; if the silica prevail, it is too loose. A medium is seen to be the best; and although the precise proportion in which the alumina and silica should exist have not been determined, it is safer that there be a tendency to an excess of alumina than silica.

Further, the fertility of the soil depends on the state of division, chemical or mechanical, of these minerals.

It would appear, then, to be a means of improving the composition of a soil, to add to its silicious matter when it is found to be too stiff, and aluminous matter when it is found to be too loose; and, further, to reduce the substances to their greatest degree of mechanical or chemical division.

Sometimes, accordingly, we have the means of improving the constitution of soils, by mixing sand with clay, or clay with sand. But, in practice, the direct mixture of these two substances, for the purpose of producing a soil of better texture, is rare; First, because the expense of this species of improvement is considerable; and, secondly, because in the state in which sand and clay are usually available for this purpose, it seldom happens that the aluminous matter of the one, or the silicious matter of the other, is in that state of minute division which is favorable to fertility.

It is otherwise with earth lime. This can, in all cases, be reduced by heat to that state of minute division which is favorable to the productiveness of soils; and hence can always be applied with benefit to those soils in which it is wanting.

Lime is sometimes mixed, in its natural state, with aluminous and silicious matter. It then forms a marl, a substance which is frequently applied to soils as a means of improving them; it is chiefly to the lighter soils that lime is applied; for then, is not only lime applied, but alumina, to improve the texture of the soil. It is by means of this mixture that some of the greatest improvements on silicious sands, that have taken place in Europe, have been effected.

There are cases in which even calcareous matter is in excess in soils. This occurs especially in districts where the chalk formation exists. When the earthy stratum resting upon chalk is very thin, the chalky matter becomes mixed with it, and being then in excess, forms a barren soil.

An obvious means of amending the composition of a soil of this kind, is by adding any of the other earths, whether silicious or aluminous. We need not here scruple to apply them, because the clay is coarse or the sand silicious. We may add them in almost any form in which they can be conveniently procured; for the effect will be to improve the composition of the soil.

There is another case in which, in like manner, silicious and aluminous matter may be applied directly in almost any state in which it may be found. This is in the

case of peat. Here the vegetable matter is in excess, and the addition accordingly of any other earths is an amendment of the composition of the soil.

We see then, that the composition of soils may be improved by the addition of animal and vegetable matter, and also in many cases, by the addition of the earths in which they may be deficient, and in an especial degree of lime, which we can always apply in the form of minute division best suited to improve the composition of the soil. This is the first of the means referred to of adding to the productive power of soils, and will be considered in detail under the head manures, and other divisions of the management of the farm.

The *second* mean referred to of increasing the productive power of a soil, is altering their texture, depth and properties, by tillage and other means.

The mere effect of that communition of the parts of soil which it undergoes in the common operations of tillage, is seen to have a beneficial influence on the productive powers of the soil. Whether the soil imbibes from the atmosphere any thing but aqueous vapor or not, it is known that the exposure of the matter of the soil to the atmosphere, and the communiting of its parts by tillage, add permanently to its fertility. Thus we learn from experience the good effects of tilling lands well; soils once tilled are rendered for the most part more productive by the process. Peaty turf, if suffered to remain in its original state, may continue to produce nothing but heath and the most useless plants; but, if merely ploughed, and exposed to the influence of the atmosphere, it will at once tend to produce grasses of a better kind, and of greater variety; and again, if a subsoil of coarse clay be exposed to the atmosphere, for the first time, it is generally at the first very unproductive, and it is not until after long exposure to the air that it becomes productive. This is most remarkable in the case of clay marl, a substance in itself containing the materials of a fertile soil, but which is often barren, until after pulverization and the influence of the atmosphere.

It is, indeed, conformable to analogy, as well as to experience, that soils should be improved by pulverization and exposure to the atmosphere. In our examination of the constituent parts of soils, we have seen that their fertility is in a great degree indicated by the proportion of minutely divided earthy matter which they contain.

The effect of tillage, therefore, may be reasonably supposed to promote this division, both by the mechanical action of our instruments, and by exposing the particles of the earth to the action of the air.

Another object sometimes produced by tillage, and subservient to the amendment of the soil, is the deepening of the upper stratum.

The subsoil, it has been seen, is distinguished from the soil so called, by its containing less vegetable and animal matter, and so being less suited to the nourishment of plants; and in many cases it is even found to be injurious to vegetation. It is generally important, however, that there be a good depth of soil, and thus it is often expedient, as a means of effecting a permanent improvement of the surface, to plough up and mix with it a portion of subsoil, even though that subsoil should in itself be infertile.

These, then, are the principal mechanical means by which we can improve the soil, and they will be considered in detail, under the various heads which relate to the operations of tillage.

Another mean, indeed, of changing the composition of soils, is incineration, commonly called *paring and burning*. This process will be described as connected with the operations of tillage, and may be considered as one of the mechanical means possessed by us of adding to the productiveness of the soil.

The *third* mean referred to, of adding to the productive power of soils, is changing their relation with respect to moisture.

In warmer countries the soil is comparatively little injured by an excess of water, and more frequently suffers from the insufficiency of it. In climates like that of Britain, however, the operation of conveying away the water which is in excess is an essential one, and, if neglected, the best devised scheme of improvement may fail. The surplus water is either stagnant upon the surface, or penetrates below the surface. The freeing of cultivated land of water upon the surface, gives rise for the formation of land into ridges, by which the water escapes without stagnating upon the ground, or sinking into the subsoil below. This is an object necessarily connected with tillage, and will be described when the manner of cultivating land is treated of.

The freeing of the soil again from that superfluous water which is contained below the surface, forms a peculiar branch of agricultural improvement, and will be described under the head Draining.

As draining is more required in colder countries, so irrigation, or the watering of land, is less required than in those countries where the heat and evaporation are greater. Irrigation, however, is a curious and interesting branch of rural economy, derived by us from very ancient times. In this country it is chiefly employed in watering the lands in grass during the months of winter and spring.

The last of the means referred to of adding to the productive power of soils, is by changing the relation with respect to temperance.

This mean of adding to the productive power of soils, is less within our control than any of the others. It is only by slow degrees that we can improve the climate of a country. It is chiefly by draining, and the raising of hedges and wood: all of these, accordingly, form important objects of rural economy, and will be partially treated of in this work.

The means, then, of adding to the productive powers of the soil,—namely, supplying the organic and earthy substances which may be required—altering its texture, depth, and properties, by mechanical means—and changing its relation with respect to moisture,—will all be treated of under the different divisions of our subject; and we shall begin with that which is most closely connected with the nature and property of soils, the nature and property of those substances which we apply to the soil under the name of manures.—[Cultivator.]

Italian Rye Grass.—The following communication relates to a grass of great promise, if it will withstand our winters. The French and Scotch commend it as highly as the Germans, though it is of but recent introduction among them; and our personal observation tallies with the high character which all give it. We sowed some in Sept. 1833. It promised remarkably well—but the winter killed it. We supplied some friends with seed, which was sown last season; it is of course not yet known what effect the winter has had upon it. The State Society have directed a quantity of seed to be provided for distribution, with the view of giving it a fair trial among us.

Description and Culture of the Italian Lolch.—(Translated from the German.)—The Italian Lolch, (Lolium perenne italium aristatum,) yields the most abundant fodder of any kind of grass that is known. Its extraordinary yield has, for several years past, extended the culture of it, in one part of Germany and Switzerland, very rapidly, and also in France some agriculturists have made experiments with it which were completely successful.

If sown in October,* its growth being very rapid, before winter sets in, it makes a thick sward equal to that on old grass land, and the first crop of hay is double to that of a common meadow. The Italian Lolch is entirely different from the English ray grass, which latter serves only as a means of making a sward on the land for pasturage, does not grow over 2½ feet in height, and gives but two ordinary crops in one season, while the former commonly grows to a height of 4 feet, on a soil more moist than dry, and gives always four abundant crops in one season, and frequently more.

The haulm is covered with leaves of a light green color. The most proper time to sow it, is in the fall. After a crop of grain is taken off from the land, turn the stubble over, harrow it and sow the seed. And frequently it grows large enough to cut before cold weather; but it is advisable not to cut it, because it will take better root if left. Such a meadow shows itself before winter thick and well overgrown, like an old one, and the first year's crop was, by haying time, a full one. Sowing it in the spring, or month of April, requires moist weather and more seed. The plant is lasting. And at the end of the seventh or eighth year, these meadows are as vigorous as they were in the first year. If, however, light places are to be seen, they may be renovated by letting the seed get ripe, and shell out, on such places, or they may be sown with new seed. A soil more moist than dry is generally best adapted for this plant, but it has been tried on high lands and on the Alps, where it likewise perfectly throve.

After grain or potatoes, (or other hoed crop,) a shallow tillage is sufficient. After clover or lucerne a deeper tillage is necessary, but on old meadow it is advantageous to cultivate first a crop of potatoes or grain, and after these being harvested in the fall, sow the Lolch. These meadows are treated like other meadows; every three years they receive a manuring—top dressing—and the first one is incorporated with the soil at the time of sowing the seed. The ground ought to be well harrowed. The seed is sown broad-cast—about 40 lbs. to the acre. If sown in the spring, 8 to 10 lbs. more are necessary, and one chooses as much as possible a wet time to sow it. After the seed is sown, harrowing may be dispensed with, but the ground ought to be rolled with a heavy roller. This operation has the double advantage to press the seed into the ground, and smooth the land for mowing. H. D. Grove.

Hoosick, Rens. co., N. Y., Jan. 31, 1835.

* Note by the translator.—The winter in those parts of Germany where the lolch is cultivated, does not set in so early as in this section of the country.

☞ "*They won't stay put.*"—The subjoined articles of intelligence may be relied on as accurate.

Divorced by the Supreme Court on Friday, 20th Feb. 1835, for intolerable severity, Mrs. Nancy Tyler from Mr. Samuel Tyler.

Married, on Monday, 23d Feb. 1735, Mr. Samuel Tyler to Mrs. Nancy Tyler.—[Green Mountain Democrat.]

CULTURE OF THE MULBERRY.—It seems to be a matter well established, that at least the white mulberry will do well in our state. We wish we could affirm as much of the morus multicaulis, but our experience compels us to say, that its success in the northern section of the State is at least doubtful. The next question to be solved is, can the silk business be rendered profitable? That it can, in families who have females and children, who will gather the leaves and take care of the worms, we have no manner of doubt. The last Farmer's Register contains an interesting letter upon the subject of silk culture, translated from the French, which the restricted limits of a monthly sheet prevents our publishing in detail, as it does many other articles of interest. It is written by M. Carrier, of Aveyron, into which department the silk business has been recently introduced, to M. Bonafous, director of the royal garden at Turin, giving an account, among other things, of the product and profits of his silk business in 1833. This is stated in the following extract:

"I will now show you," says the writer, "the account of the sale of my silk of 1833. I shall take care to subtract the expenses, and you may see the clear profit.

29 1-5 kilograms white silk, at 63 francs the kilogram, . .		1,830f. 60c.
2 11-12 inferior silk, at 18 fr. the kilogram	53 95	
		1,884f. 55c.
Deduct for portage . .	16 00	
		1,868f. 55c.
Value of the different remains, coming from the remains of the filatures used at my house,	115 00	
Sum realized . .		1,983f. 55c.
For the expense of management, ...	171f. 75c.	
For filature, reeling,	263 85	
	435 60	
Profit . .		1,548f. 95c.

"To appreciate the advantages of the cultivation of the mulberry, one must remember that this sum, 1,548 francs of profit, (after deducting all the expenses,) is the product of leaves furnished by trees which have occupied for eight years, on an average, a piece of ground rather less than half a hectare, or at most two seterees, a local measure."

The kilogram is two pounds two ounces and four grains, avoirdupois; the franc is 18 ¾ cents; the c. (centime) one hundredth part of a franc; the half hectare is about 1¼ acres. Hence, the gross product in silk, from one and a quarter acres in mulberries, was 69¼ lbs. which sold for $350.25, or about $5 the pound, and after paying all expenses afforded to the proprietor a net profit in one year of about $290.40.

We quote again from M. Carrier's letter: "The proprietor who wishes to occupy a plantation of mulberry trees, supposing he had already at his disposal a quantity equal to those which I stripped last spring, and in the same condition, that is, producing 160 quintals of leaves, at four francs the quintal. Well, this proprietor could have obtained from half a hectare (about 1¼ acres) of ground, with no other expense than that of cultivating the trees, a revenue of 640 f., or 320f. for each seteree, composed of 640 square fathoms.

"The person who would have bought this quantity of leaves, to devote himself only to the raising of silk worms, would have had (as I did) 928 pounds of cocoons, and would have sold them at 1f. 50c. a pound, according to the course of that time: this sale would have produced 1,392f. 00c.

Deduction of expenses, purchase of about 8 ounces of eggs, at 3f. the ounce, 24f. 00c.		
Expenses of all kinds for the management	171 75	
Price of 160 quintals of leaves, at 4f.	640 00	
Rent of the room,	60 00	
		895 75
His part of the profits for 40 days' attendance		496 25
The filateur, who buys the cocoons, obtains a quantity of silk equal to mine, and sells it in the same manner, . .		1,868 55
He draws from the remains . .		115 00
Total,		1,983f. 55c.
It is necessary to deduct from this sum, as the cost of 928 pounds of cocoons, at one franc 50 c. . .	1,392f. 00c.	
Expenses of the filature	263 85	
		1,655 85
Clear gain of the winder . .		327f. 70c.

"The laborer, with a family, takes for his share the remains of this filature, employs his wife and children to prepare and wind the low and different qualities of silk, which are in much request and readily sold. These products can be valued, after having received all the suitable work, at . . . . . 165f.

Deduction for the purchase of the first materials . .	50f.	
Hand work, although gained by the family	30	
		80
Profit, without including his work, already paid, ...		85f.

"A simple recapitulation will make the result better understood than this division of the labor, which division certainly agrees, in many cases, with the taste or situation of persons who neither wish, nor are able, to undertake all parts of the business.

The land owner, who sells 160 quintals of leaves, at 4f. receives . .		640f. 00c.
The person who buys them, and manages the raising, gains		496 25
The winder, who takes charge of the cocoons, winds them, and receives for his labor .		327 70
The laborer who works up the remains, does the labor for 30f. and gains besides . . .		85 00
Sum equal to the total profit which I have made by the union of all these operations		1,548f. 95c.

"The calculations which I have just presented, speak loudly enough without my adding the least observation to make the evidence more sure; I will only say, one of the great benefits of this direction of industry is to make a considerable mass of work for all classes of society, and for all ages."

A plantation of mulberries may soon be obtained, by procuring the young trees from the nurseries, or by sowing the seed. An ounce of seed will produce from two to three thousand plants. Sow early in May, upon a bed of good earth, well pulverized, in drills a foot apart; cover with half an inch of fine mould, compress the surface slightly with a hoe, that the soil may better retain moisture, and come in contact with the seeds, and if the weather is dry, water occasionally, to aid germination, and to enable the young roots to get firm hold of the earth; keep the bed free from weeds, and after one or two years, prune out the plants in nursery rows, three feet apart, and in two years more they will be fit to set out where they are to remain permanently. —[Cultivator.]

THINGS A FARMER SHOULD NOT DO.—A farmer should never undertake to cultivate more land than he can do thoroughly; half tilled land is growing poorer—well tilled land is constantly improving.

A farmer should never keep more cattle, horses, sheep, or hogs, than he can keep in good order; an animal in high order the first of December, is already half wintered.

A farmer should never depend on his neighbor for what he can, by care and good management, produce on his own farm; he should never beg fruit while he can plant trees, or borrow tools while he can make or buy; a high authority has said, the borrower is a servant to the lender.

The farmer should never be so immersed in political matters, as to forget to sow his wheat, dig his potatoes, and bank up his cellar; nor should he be so inattentive to them as to remain ignorant of those great questions of national and state policy which will always agitate, more or less, a free people.

A farmer should shun the doors of a bank, as he would an approach of the plague or cholera; banks are for men of speculation, and theirs is a business with which farmers should have little to do.

A farmer should never be ashamed of his calling; we know that no man can be entirely independent, yet the farmer should remember, that if any one can be said to possess that enviable distinction, he is the man.

No farmer should allow the reproach of neglecting education to lie against himself or family; if knowledge is power, the beginning of it should be early and deeply laid in the district school.

A farmer should never use ardent spirit as a drink; if, while undergoing severe fatigue, and the hard labors of the summer, he would enjoy robust health, let him be temperate in all things.

A farmer should never refuse a fair price for any thing he wishes to sell; we have known a man who had several hundred bushels of wheat to dispose of, refuse 8*s.* because he wanted 8*s.* 6*d.*, and after keeping his wheat six months, was glad to get 6*s.* 6*d.* for it.

A farmer should never allow his woodhouse to be emptied of wood during the summer months; if he does, when winter comes, in addition to cold fingers, he must expect to encounter the chilling looks of his wife, and perhaps be compelled, in a series of lectures, to learn, that the man who burns green wood has not mastered the A B C of domestic economy.

A farmer should never allow his windows to be filled with red cloaks, tattered coats, and old hats; if he does, he will most assuredly acquire the reputation of a man who tarries long at the whiskey, leaving his wife and children to freeze or starve at home.

There are three things of which the man who aims at the character of a prosperous farmer will never be niggardly—manure, tillage, and seed; and there are three things of which he will never be too liberal—promises, time, and credit. W. G.—[Genesee Farmer.]

NEW-YORK AMERICAN.

MARCH 21—27, 1835

COUSIN'S REPORT ON EDUCATION IN PRUSSIA, as translated by Mrs. Austin, and republished in this city by *Wiley & Long*, is a book of so much value, that we gladly make room for the annexed paper—founded on its recommendation of normal schools—by *J. Orville Taylor*. We wish we could induce all who either have children to educate, or any connection with schools, to read *Cousin*. Yet, strange to say, while a novel, frequently more likely to corrupt, than to improve, the mind, is eagerly sought, this admirable book has found few or no purchasers in this city.

SEMINARIES FOR TEACHERS.

By J. Orville Taylor.

Mrs. Austin, the accomplished translator of M. Cousin's Report on "Public Instruction in Prussia," says "there are two or three other points which I would fain recommend to the peculiar attention of the reader. One of the most important, is the absolute necessity of securing a constant supply of well-trained schoolmasters. Time and experience have, it is to be supposed, nearly removed the illusion of "mutual instruction" as a substitute for the instruction communicated by a mature to an immature mind:—as an auxiliary in certain mechanical details, no one disputes its utility. Observation long ago convinced me of the entire truth of the maxim laid down by the Prussian government, and approved by M.Cousin, that, "As is the master, so is the school." There is no truth more evident than the one expressed in this maxim. The schools must from the necessity of the case be like their teachers, hence the absolute necessity of using proper means to qualify them for the profession of teaching. In this department of instruction, Prussia is far in advance of the United States. That despotic government (though at present paternal in administration) requires the teachers of elementary schools to pass through certain stages of preparation in a normal school, before they can assume the difficult and responsible station of Instructor. The organized school system in neither of our State governments, makes no such requirements. We have not till very lately given any encouragement to young men that would induce them to make suitable preparations to teach even a district school. The State of New York has just made some provision for the education of teachers; the plan we shall speak of before we close this article. There have been a few private seminaries which have made the education of teachers their principal object; but these have received no assistance from government, and have done very little towards supplying the schools of the United States. The Seminary at Andover, conducted for several years past by the Rev. *S. R. Hall*, has done much good, both as presenting a model for such institutions, and by sending out many able instructors. At present it seems to be generally admitted that such institutions are indispensible, and that it is the duty of the State governments to establish and sustain them.—Since we are about to open seminaries for teachers among us, it is fortunate that we have a full and faithful report by M. Cousin, of the workings of the Teachers' Seminaries in Prussia. The American edition of this work will furnish our Legislature, School Committees, and School Teachers, with instruction, not only from the highest authority, but also from the most enlightened source. While speaking of the necessity, nature, studies and benefits of seminaries for teachers, I shall avail myself of such parts of this report as will give light and interest to the subject, for says M. Cousin: "The true greatness of a people does not consist in borrowing nothing from others, but in borrowing from all whatever is good, *and in perfecting whatever it appropriates.*"

In *M. Cousin's*, remarks on the training of primary instructors he says, "the best plans of instruction cannot be executed except by the instrumentality of good teachers; and the State has done nothing for popular education, if it does not watch that those who devote themselves to teaching be well prepared; then suitably placed, encouraged and guided in the duty of continued self-improvement; and lastly, promoted and rewarded, in proportion to their advancement, and punished according to their faults. Such is the object of title 6, of the law 1829. We translate that, as we did those which preceded. A schoolmaster, to be worthy of his vocation, should be pious, discreet, and deeply impressed with the dignity and sacredness of his calling. He should be thoroughly acquainted with the duties peculiar to the grade of primary instruction in which he desires to be employed; he should possess the art of communicating knowledge, with that of moulding the minds of children; he should be unshaken in his loyalty to the State, conscientious in the duties of his office, friendly in his intercourse with the parents of his pupils, and with his fellow-citizens in general; finally, he should strive to inspire them with a lively interest in the school, and secure to it their favor and support.

"*Of the Training of Schoolmasters*".—In order gradually to provide schools with masters of this character, the care of their training must not be abandoned to chance; the foundation of primary normal schools must be continued. The expenses of these establishments should be defrayed partly by the general funds of the state and partly by the departmental funds for schools."

Here Cousin unequivocally declares that the "State has done nothing for popular education" if it does not see that the teachers are well qualified. The legislature of each state should immediately make provision for the education of common school teachers. That Prussia has done this, is the whole secret of her superior schools. But teachers must not only be "prepared," they must also be, and this by the government, "suitably placed, encouraged, guided and rewarded." How far short are we of Consin's advice and Prussia's practice!!

The establishments for educating teachers in Prussia are supported by the government funds and by the smaller and local divisions of the government. With us the school fund of each state, may erect suitable buildings, remunerate the professors, furnish a library and apparatus, and bear a part of the students expenses while preparing himself for teaching. This would give encouragement, to make teaching a study and a profession for life.

The following extract is from Consin's report, and is translated by himself from title 6 of the law of 1819. We make this extract to show the design which the Prussian government had in establishing teacher's seminaries, or to use the Prussian name "Normal Schools." "The principal aim of the primary normal schools should be, to form men, sound both in body and mind, and to imbue the pupils with the sentiment of religion, and with that zeal and love for the duties of a school master which is so closely allied to religion." It is seen that their design is to make their pupils *men*, in knowledge and in person, and not only this, but religious men, and men in love with their business. The next extract designates the length of time to be spent, and marks out the course of studies to be pursued in these seminaries.

"In each primary normal school the length of the course shall be three years, of which the first is devoted to supplemental primary instruction, the second to specific and more elevated studies, and, the third to practice and occasional experiments in the primary school annexed, and in other schools of the place. When the supplemental instruction is not required, the course may be reduced to two years."

The plan proposed for this State in the report of, and adopted by, the regents of the University, is to select one academy in each of the eight Senate districts of the State; to appropriate five hundred dollars to each, for the purchase of a library and apparatus adapted to the use of those who are preparing to be teachers, thus reserving six thousand dollars out of the permanent fund of ten thousand dollars now on hand, for future contingencies; and from the annual surplus revenue of the literature fund, (estimated at three thousand five hundred dollars,) to appropriate four hundred dollars to each of the Academies, to provide a special course of instruction in the art of teaching.

The following academies have been selected for this purpose.

For 1st Dist.,	Erasmus Hall Academy,	King's Co.,
" 2d "	Montgomery "	Orange Co.,
" 3d "	Kinderhook "	ColumbiaCo.,
" 4th "	St. Lawrence "	St.LawrenceCo.,
" 5th "	Fairfield "	Herkimer Co.,
" 6th "	Oxford "	Chenango Co.,
" 7th "	Canandaigua "	Ontario Co.,
" 8th "	Middlebury "	GeneseeCo.,

In regard to the course of study to be pursued, it is remarked in the report, that the *standard* should be raised "as high as possible," because "the qualifications of those who follow it will incline to range below, and not above, the prescribed standard." It proposes that none should be allowed to enter on the course, who are not acquainted with reading, writing, arithmetic, grammar, and so much of geography as is found in the duodecimo works on this subject, usually studied in our schools. The following are the subjects of study proposed for the teachers' course, which are required to be thoroughly taught, and while they are not intended to exclude others, shall not be allowed to give way to any.

1. The English language.
2. Writing and Drawing.
3. Arithmetic, mental and written; and Book-keeping.
4. Geography and general History, combined
5. The History of the United States.
6. Geometry, Trigonometry, Mensuration and Surveying.
7. Natural Philosophy and the Elements of Astronomy.
8. Chemistry and Mineralogy.
9. The Constitution of the United States, and the Constitution of the State of New York.
10. Select parts of the Revised Statutes, and the duties of Public Officers.
11. Moral and Intellectual Philosophy.
12. The Principles of Teaching.

Although the Regents have not excluded other studies than those contained in this programme, yet I am surprised that Botany, Zoology, and Agriculture, and even Physiology, are not included.

What more interesting and useful studies for our young farmers than Botany, Zoology, Agriculture? And how important is it that they should have teachers who are well acquainted with these departments of Natural History.—Composition likewise is not mentioned; one of the most important parts of every mans' education.

To secure the services of those who have been educated by the State, to make such follow the business of teaching as a profession for life is the most difficult thing of this part of Legislation. The graduates of Teacher's Seminaries will be qualified to demand a much higher compensation for their services, than the employers of district schools will feel disposed to give them: and unless there is something to prevent, the laborers will go where they are best rewarded. There are two ways of securing the services of those who have been educated in the teacher's seminary. The first is, by creating a disposition in parents to reward their teachers with an adequate compensation. If parents are disposed to pay these teachers as much as they will be able to get at any other employment, they will secure them as teachers; but they will not teach unless parents pay more than they do at present. This rests with parents; and we do hope that they will adequately reward those who have spent much time and money in preparing themselves to teach.

The other way is adopted by Prussia. I think the feelings of the people and the spirit of our government would forbid this. I do not think that it can be adopted in this country. It may perhaps in part. The following extract from Cousin will show the laws regarding those who have been qualified to teach by the government. "Every pupil of a normal school is obliged, at the expiration of the term, to accept the mastership to which the provincial consistories may appoint him; the prospect of advancement being, however, always set before him as the consequence of continued good conduct." This compels every one who is competent to become a schoolmaster. If they are not competent, they

are either rejected altogether or sent back to review their studies. This will be seen in another part of the same work referred to above.

"Every young man whose competency is admitted shall receive a certificate, delivered and signed by the whole commission, his examiners, by their president, and by the head master of the primary normal school or other establishment in which he was trained to his calling. It must state his moral character, and his degree of aptitude for teaching, such as prove incompetent shall, by a formal decree, be wholly rejected, or sent back to continue their studies."

The Prussian government is careful not to admit those into the normal schools who are physically or morrally disqualified from making good teachers. To show this we make another extract from Cousin.

"The normal school is by no means designed for those who are unfit for any business, and think, if they can read and write, they are capable of becoming schoolmasters. This notion is so deeply rooted, that you hear fathers declare with all the simplicity in the world—"My son is too delicate to learn a business,"or"I don't know what to make of my son, but I think of getting him into the normal school." We reply to such, that the pupils of the normal school must, on the contrary, be sound both in body and mind, and able to brave the toils and troubles of a career, as laborious, as it is honorable. Much neglect unfortunately, still exists, on a subject which is of the highest importance, the methodical preparation of these young men for the calling which it is desired they should embrace. A false direction is often given to their preliminary studies. A young man is believed to be well prepared for the normal school, if he have passed the limits of elementary instruction, and if he have acquired a greater mass of knowledge than other pupils. It frequently happens, that candidates who come strongly recommended from school, pass the examination without credit, or are even rejected. The most immediate and the most important aim of all instruction, is to train up and complete the Man; to awaken the energies of his soul, and to render him not only disposed, but able, to fulfil his duties. In this view alone can knowledge and talents profit a man; otherwise, instruction, working upon sterile memory and talents purely mechanical, can be of no high utility. In order that the teacher, and particularly the master of the primary school, may make his pupils virtuous and onlightened men, it is necessary he should be so himself. Thus, that the education of a normal school, essentially practical, may completely succeed, the young candidate must possess nobleness and purity of character in the highest possible degree, the love of the True and the Beautiful, an active and penetrating mind, the utmost precision and clearness in narration and style." The board of examiners connected with our seminaries may obtain some valuable hints from the preceeding extract.

Attached to every teacher's seminary should be a department for teaching the elementary branches of an english education. This is necessary that those who are preparing to teach may make a practical application of their instructions. On "Practical Teaching" hear Cousin. "All the studies and all the knowledge of our pupils would be fruitless, and the normal school would not fulfill the design of its institution, if the young teachers were to quit the establishment, without having already methodically applied what they had learned, and without knowing by experience what they have to do, and how to set about it. To obtain this result, it is not sufficient that the young men should see the course gone through under skillful masters, or that they should themselves occasionally give lessons to their shool-fellows; they must have taught the children in the annexed school for a long time, under the direction of the masters of the normal school. It is only by familiarizing themselves with the plan of instruction for each practical branch, and by teaching each for a certain time themselves, that they can acquire the habit of it without method."

At St. Louis, (Mo.) at 8 o'clock on the morning of the 7th Feb. the mercury stood at 18 degrees *below zero*, and on the morning of the 8th, at the same hour, it was down to 22 *below zero*.

SUMMARY.

Congress at its last session adopted a resolution that a gold medal be presented to Col. Croghan, and a Sword to each of the officers under him for their gallantry and good conduct in the defence of Fort Stephenson, during the late war. To the ability and bravery of Col. Croghan and those under him on this occasion is ascribed the discomfiture of the British plans on Lake Erie in 1813. But for the gallant defence of Fort Stephenson the military stores of the American Army and the fleet with which Perry afterwards gained his glorious victory would have fallen an easy prey to the British. The defence of the Fort was not only one of the most brilliant, but it was also one of the most important achievements of the war. The names of his companions to whom, or their eldest male heirs, swords have been voted are, Capt. James Hunter, Lieut. Benjamin Johnston, Cyrus A. Baylor, John Meek, and Ensigns Joseph Duncan and Edmund Shipp.—[Baltimore American.]

Cylinder Cannon.—Messrs. Allen & Ball, of Springfield, Mass., have invented what they call a cylinder cannon; upon the cylinder may be placed as many barrels as may be desired, each barrel capable of making two discharges a second. It was built for a company in Lowell, who have procured a patent in this country and France, and have now an agent in England for the purpose of getting it patented there. "It was to us, says the Hamden Whig, "altogether a novel piece of machinery, and the idea of a cannon being fired, gun after gun, by an operation like that of a boy turning a grindstone, struck us as strangely singular."

The Spanish authorities at the Island of Porto Rico have subjected American, in common with other foreign productions, to an increase of duties, amounting almost to prohibition.

The Antiquaries Humbuged.—The British Museum recently purchased a splendid specimen of the Saurian or lizard tribe, one of the "monsters born before the flood," and paid for it the sum of $2500. It has been proved within a few weeks to be an ingenious fiction, in *plaster*.

If a certain contingency takes place in relation to the present Royal Family of England, the Queen would become, on the death of the King, Regent of the Kingdom, by a law pased in 1830. 1 Wm. 4, Chap. 2d.

There is Iron enough in the blood of 42 men, to make a ploughshare weighing 24 pounds. The quantity of Brass in their faces cannot be ascertained with accuracy.—[Buffalo paper.]

Marrying Daughters.—The Spaniards say—"at eighteen marry yonr daughter to her superior at twenty to her equal—at thirty to any body that will have her."

[*From the Barbadian, February* 7.]

We have this morning received by Mail boats papers from the colonies of Demarara, Tobago, Trinidad, Grenada, and St. Vincent. The apprenticed labourers seem to be acting their parts well every where except in Demarara.

The Cincinnati papers mention the death of the venerable Bishop McKendree, of the Methodist Episcopal Church, which occurred on the 5th instant. Nothing is said of the place or cause of the Bishop's decease.

Among the business transacted by the Legislature of New York, is the permission given to Posteritas Pope Benton, to take and use the name Posteritas Benton Pope. They should have made his *first* name *last*.—[U. S. Gazette.]

The Duke of Wellington's Father.—The first and last Lord Mornington (Garrett Wellsley) had always a strong partiality for the harpsichord, and contrived to steal intervals of practice in spite of his sister's assertion that he only spoiled the instrument. His father about this time declaring his intention of having an organ for his chaplet, Garrett undertook to officiate as organist the moment the instrument should be finished. This was accomplished in less than a year and a half; and at the expiration of that period he sat down at the maker's, and played an extempore fuuge, to the astonishment of all present, who did not imagine that he could have executed a bar of a single tune.—[The Georgian Era volume IV.]

The Quarrels of Benevolence.—The following is a liberal exemplification of the doctrine of *provoking* one another to good works. We take it from the Cazenovia, New York, Monitor:

A strife, of rather an unusual character, was carried on in Buffalo, during the last cold weather. The Mayor, Ebenezer Johnson, gave public notice in the city papers on the 10th February, that he would furnish 25 cords of *Wood* to such poor families as were unable to supply themselves, with a proviso, that "none need apply whose poverty has been caused by intemperance."

This brought out Manly Colton, Esq, on the 18th, who gave a like notice, that he would give "to the shivering mothers and children of the city, who have become poor and destitute in consequence of the beastly crime of intemperance on the part of their protectors," 25 cords of *Wood*.

The next day, O. H. Dibble gave notice that he would furnish 25 cords of wood to such families as were unable to purchase it, without requiring them to prove either that are they "beastly drunkards," or "that they have never expended money in intemperance."

The day following, Samuel Twitchell, jr. offered to give 25 cords of wood to such as were destitute, and unable to purchase, "no matter from what cause they became so."

On the same day, Alanson and Julia Palmer announced, that they would give one hundred dollars, in *provisions and clothing*, to the needy. They say, "It is enough for the applicants to be poor—we wish not to know the cause of their misfortune, but wish all to be temperate, industrious, and happy."

John Wheelock, a butcher, also gave notice on the same day, that he would give to the suffering poor of the city, 25 pounds of beef, for every cord of wood that the Mayor should furnish—and would "not go into a detailed examination of *how* they became needy."

Greek Fire.—Constantinople was indebted for her preservation to a new and fortunate discovery which chemistry accidentally opened to the Greeks at a time when there was neither courage, patriotism nor talent in either commander or men sufficient to repel so formidable an enemy. An inhabitant of Heliopolis, (there were two towns of that name, one in Syria, the other in Egypt,) named Callinicus, discovered a composition of naphta, or oil of bitumen, pitch, and sulphur, which, once set on fire, could not be extinguished by water; which adhered to wood with destructive activity, and consumed with equal facility a single ship or a whole fleet; and which, when thrown on the combatants, insinuated itself between the joints of their armour, and destroyed them by a death of torture. Callicinus, a subject of the khaliphs, but a Christian, brought his secret to Constantinople and used it in defence of Christendom. This secret was preserved till the middle of the fourteenth century, when it was superseded by the still more tremendous invention of gunpowder. Its qualities are very imperfectly known to us. The Greeks called it "liquid, or marine fire." The prows of vessels and the ramparts of towns, were furnished with tubes by means of which this blazing oil was thrown to a large distance; a piston projected it with great velocity into the air, as soon as it came into contact with which, it became ignited by some process unknown to us; the devoted victims saw it approaching in the form of a fiery serpent, till at last it fell in a burning shower on vessels and men. An hour's fight would cover the sea with this flaming oil, and give it the appearance of a sheet of fire. The Saracen fleets were repeatedly destroyed by it, and their most valiant warriors, whom the near aspect of death had never daunted, recoiled from the terrors and tortures of this liquid, which crept beneath their armour and clung to every limb.—[Lardner's Cyclopedia.]

Discovery of a Sinking Vessel.

Drunken Frenzy.

The Eddystone light was just dipping on the verge of the horizon, when the bright flash of a gun was seen broad on her starboard bow, which was quickly succeeded by another. Old Blowhard had the watch, and it was immediately reported to the Captain. "Can you make out any

thing with your glass, Master?" inquired the skipper. "No Sir," returned the old man, "nor have we heard the reports, which makes me think it must be some vessel in distress."—"What rate is she travelling at, Mr. Blowhard?" asked the Captain. "The mate of the watch has just hove the log, Sir," replied the Master, "and she was going eight and a half; but I'm thinking, Sir, with a head sea, we cannot give her more than eight knots." "By hauling up a point or two, it will throw us more to the windward, certainly," said the Captain, speaking to himself, "and if there are fellow creatures in danger, it would be cruel to leave them to perish. Still my orders are positive not to be turned out of my course for anything. Do you really suppose, Mr. Blowhard, that it is some craft in distress?" "It is not possible for man to say for sartin," answered the Master, "but I've been all my life upon the ocean, Sir, and it seems to me as if the Creator had given the creatures he designs to witness his wonders on the deep a nat'ral instinct to discover many things that are not revealed to the outward eye; and so when I saw the flashes, it seemed to strike my mind that they came from one who needed a friend." "Haul up in the direction, Master," said the Captain; "I'll be on the deck directly." "Aye, aye, Sir," replied the old man; "we shall soon make out what it is." He closed the cabin-door and ascended to the deck. "The watch trim sails—starboard cat-head there! have you seen any more flashes?" "Yes, Sir," answered the man, "and there seems to be a sail in that direction." "Why, where else should a flash come from you lubber?" grumbled the master: "you may run upon that course till the card of the compass slues itself end for end, and never touch a bit of land large enough to grow a gooseberry-bush! Brace up the yards!" he vociferated through his speaking trumpet; "get a pull of the main fore sheets; trim the jib there, forud! and after-guard, haul in the boom sheet. Port, boy—port a little." "Port it is, Sir," replied the man, putting the tiller to leeward: "shall I bring her to the wind, Sir?" "Yes, luff her up, boy! full and by; remember so as to let her walk. Forud, there! steady the weather leeches by the bow-lines—taut d'ye hear? Keep a good look-out before for the stranger, and don't let your eyes get plugged up with your night-caps." At this moment the Captain made his appearance on the quarter-deck. "We must have the hands up, Mr. Blowhard; for if we hug the wind, we shall want another reef in the topsails. Quartermaster, how does she head?" "W. N. W., Sir, clean cap full," answered the man; "and I just seed a flash about a point to looard of the bowsprit end."

The hands were turned up: every soul took his station; and as mine was on the forcastle, I directed my eager gaze towards the point where the stranger was supposed to be; but I could make out nothing, so very dark was the night. The top-gallant masts were bending like coach-whips, and the sweet little brig was dashing along the seas, and throwing aside the waters like a grampus in sport. "Do you see any thing of the stranger, forud?" hailed the Captain. "No, Sir," replied I; but at the very moment I had answerd, another bright flash broke out of the gloom, and a heavy report of a gun came sullenly booming over the dark waters, and was borne away to the leeward on the gale. "There's another gun!" I exclaimed, "and she must be about a point and a half under our lee, as we are heading now." "Keep her W. b. N.," cried the Captain to the helmsman; "Mr. Derrick, let them give her a foot or two of the sheets." The brig felt the freedom she was enjoying, and bounded away at a more rapid pace. "Man the fore and main clew garnets, and the t'gallant clew lines," continued the skipper; "and before the watch is called again, Mr. Derrick, we'll double-reef the topsail. A good look-out, before, there!"

The "aye, aye, Sir," had scarcely been uttered, when I discovered a dark log-like object, occasionally appearing and disappearing as it rose on the summit of a sea, or sunk into the hollows between the rolling waves; it laid directly a head of us, and we neared it so rapidly, that I had barely time to sing out "up with the helm—keep her away!" and have the order obeyed, before we had shaved the hull of a large vessel so close that our weather-quarter was struck by the stump of his bowsprit—the only remnant of a spar they had left standing. The shock staggered us for a moment or two; but the Captain's voice shouting "up courses—in top-gallant sails—square away the main yard," aroused the people; the sails were reduced, and the brig came up to the wind on the starboard tack; but having ranged a considerable distance away from the stranger, we wore round, and passed under his lee. "Ho, the ship a-hoy!" bellowed the Captain. "Halloo!" was the response. "From whence came you?" inquired the skipper. "From Goree, on the coast of Africa," was the reply.—"Where are you bound to?" continued the Captain; "mind your weather-helm, boy, she's running up into the wind's eye. Where are you bound to?" "To the bottom unless you'll take us aboard," answered the person addressed; "our hold is filling fast, one of the pumps is choked, and the men are completely worn out." "Hoist the boats out, Mr. Derrick, and come aft here, and lower the jolly-boat down," said the Captain. The orders were promptly obeyed, and I was directed to board the stranger and act according to circumstances. There is something peculiarly affecting in viewing a mastless vessel rolling her heavy sides in the trough of the sea, with nothing aloft to steady her: it is a melancholy spectacle, awakening the most painful emotions in the mind of a seaman; and I felt it so when I had reached her deck, and found the sky every where above me without a rope yarn to checker the dreary monotony of the blackened clouds that flew noiselessly on the wings of the wind. The seas beat over the devoted vessel as she rolled her gunwales in, and the phosphoric light of the salt water glistened like a thousand stars, as if the waves in mockery would array their victim in bright gems previous to the sacrifice. Yet what a strange compound is man! In the midst of this devastation, whilst the grim king of terrors was threatening to break the hour glass of time to many a hapless being, the man who, above all, should have retained his self-possession—the master of the ship—was beastly drunk.

The mate informed me that her name was the Neptune, of Liverpool; they had visited the coast of Africa and had collected a valuable cargo of ivory, some sort of wood (I forget the name) used in dyeing, and gold dust; they had lost their masts during the gale of the preceding days. "And is there no chance of saving her?" said I; "whereabouts is your leak, and how much water have you in the hold? A lantern here, my lads, and bear a hand with it." "It's of no manner of use, Sir," replied the mate.—"Hark for a moment, and you'll soon diskiver she's near her flurry, if you are any way skilled in the death-moans of a sinking ship."—There certainly was something extremely appropriate in the term 'death-moans,' for the struggling of the water against the pentup wind in the hold did produce sounds like the groans which may be supposed to proceed from a strong giant in the last convulsive pangs of expiring existence. Nevertheless I was determined to examine into the state of the vessel myself, as I had heard much of the tricks employed to cheat the the underwriters, though in the present instance there certainly was nothing to lead any one to entertain the least suspicion but that the whole had been caused by the violence of the weather, to which also might be added the neglect of the master, through confirmed habits of intemperance. Calling Peters to my side with a lantern, I went down below, had the hatches removed, and found the hold was fast filling from the pumps having been totally deserted. "Well, I'm blessed, Mr. Oldjunk," said Peters, "but I should like to get a little gold-dust, for they tells me its a capital thing to clean the teeth with; and, talking about teeth, my dear eyes, do look at them elephant's tusks and 'what not, as Mr. Warner would say. Arn't it a pity they should all go to the bottom? Well, I'm blowed, if old Davy won't have enough in his locker to set up a dentist's shop for whales, and such like; and there's some on 'em big enough for the krakeens off the North Cape. Do, pray, Sir, let me take half-a dozen aboard for Mr. Blowhard—he's rather short of ivories, and I could pick 'em out just to fit his jaw?" "Be silent, Peters," said I, "and attend to your duty; this is no time for cracking your jokes!—see, the water rises fast. Away there on deck all of you, and bear a hand into the boats." I soon became sensible of the utter impossibility of saving the ship, anp therefore directed the whole of my attention to the preservation of the men, especially as the greater part of them were more or less in a state of intoxication, and, with the characteristic recklessness of sailors, were getting up their bags, instead of thinking about the immediate danger that surrounded them. I had not seen the master, but descending the companion, I entered a very handsome cabin panelled with mahogany, against which the bright cutlasses, bayonets and pistols were arranged in exact and pretty order; a noble pier glass was affixed to the rudder case, and the curtains of the bed-places as well as those of the stern windows were tastefully festooned with green silk. The master was on his knees scrambling against the bulk head, (and receiving many a severe bruise as the heavy vessel rolled, (endeavoring to get hold of one of the numerous weapons, and at the same time muttering blasphemous curses against himself, his men, and even his Creator. He had contrived to pull down a bayonet which laid by him on the deck, the point having become fixed in the timber, which secured it from fetching away. I directed some of the people to remove him upon deck, but he grasped the bayonet and tried to raise himself up, swearing, "No d——d man-of-war's man should usurp his authority," and that his men were a set of mutinous dogs, who had deserted him:" he then called to the mate and ordered him "to hoist the jack forud for a pilot." To reason with a wretched creature in his state was useless, and therefore I had him seized and carried up the companion. Nothing could exceed the horror of his look when the light from the lantern flashed upon his face, and, supported by two men who seated him on the sky-light, he beheld his vessel—that beautiful creature which a few hours before stemmed the waves in grandeur—now a complete wreck: it sobered his reason for the moment, but only for the moment; a yell of bitter anguish escaped him, and reason took her flight; for he became a perfect madman, and his ravings were dreadful to hear, whilst the violence of his paroxsyms rendered it very difficult to hold him fast. Under all circumstances I did not think it prudent to secure his arms and legs by lashings, as, in case of accident, he would have been entirely deprived of the powers of self-assistance; but I determined to pinion him the moment we had got away from the ship, as his unceasing struggles might endanger the safety of the whole; but his own conduct rendered my intentions unavailing. I was holding on at the gangway, and hurrying the ship's crew into the boats, when a cry from Peters aroused my attention, and, turning my head a little, the wind, from a heavy blow aimed with a handspike, came rushing down upon me, and the next instant the maniac master, overpowered with the force of his own exertions, and missing the resistance which he would have met with had his design taken effect, darted over the side headforemost into the sea—the roll of the ship throwing him beyond the boat that laid alongside. Every exertion was made to save him, but without avail: he arose after a short distance, as we could judge by the commotion in the water, and then disappeared forever. The spectacle that had just been witnessed rendered the ship's crew more tractable, and, after some difficulty, I got them all into boats except one man who could not be found, and it was conjectured he had fallen into the hold and been drowned; but after we had shoved off we could hear the most piercing shrieks, and I was about to put back when the heavy mass rolled into the sea, an explosion like the discharge of artillery succeeded, and the following wave curled up its head unburthened—she had gone down. We were soon on board the sloop, the boats were hoisted in, and the brig kept away S. W. with as much canvas as she could stagger under, and by daylight we were well in with Ushant, running at the rate of ten knots an hour.

Political Register, for 1835.

The subjoined article will be worth preservation, as a matter of reference.

UNITED STATES.

Andrew Jackson, Tenn. President.
Martin Van Buren, of N. Y. Vice President.
John Forsyth, of Georgia, Secretary of State.
Levi Woodbury, of N. H. " Treasury.
Lewis Cass, of Ohio, " War.
Mahlon Dickerson, of N. J. " Navy.
Wm. T. Barry, of Ky. P. M. General.
B. F. Butler, of N. Y. Attorney "
John Bell, Tenn. Speaker of the House.

GOVERNORS OF THE STATES.

		Elected.
Maine,	Robert P. Dunlap	1834
New Hampshire	William Badger	1835
Massachusetts	John Davis	1834
Vermont	Wm. A. Palmer	1834
Rhode Island	John B. Frances	1834
Connecticut	Samuel A. Foot	1834
New York	Wm. L. Marcy	1834
New Jersey	Peter D. Vroom	1834
Pennsylvania	George Wolf	1832
Delaware	Caleb B. Bennet	1832
Maryland	James Thomas	1834
Virginia	Lit. W. Tazewell	1833
North Carolina	David L. Swain	1834
South Carolina	George M'Duffie	1834
Georgia	Wilson Lumpkin	1833
Ohio	Robert Lucas	1834
Kentucky (Acting)	J. T. Moorehead	1832
Indiana	Noah Noble	1834
Illinois	Joseph Duncan	1834
Missouri	David Dunklin	1833
Alabama	John Gale	1833
Tennessee	Wm. Carrol	1833
Mississippi	H. G. Runnells	1833
Louisiana	Edward D. White	1834

GOVERNORS' SALARIES, &c.

The following tabular statement of the Governors' Salaries, the number of Senators and Representatives, and their pay per day, of each State in the Union, is taken from the American Almanac for 1835:

STATES.	Governors' Salaries.	Number Senators.	Number Reps.	Pay per day.
Maine	$1500	25	186	$2 00
N. Hampshire	1200	12	230	2 00
Massachusetts	3666 66	40	560	2 00
Rhode Island	400	10	72	1 50
Connecticut*	1100	21	208	2 00
Vermont	750	none	230	1 50
New York	4000	32	128	3 00
New Jersey	3000	14	50	3 00
Pennsylvania	4000	33	100	3 00
Delaware	1333	9	21	2 50
Maryland	3500	15	80	4 00
Virginia	3333 33	32	134	4 00
N. Carolina	2000	64	134	3 00
S Carolina	3500	45	124	4 00
Georgia	3000	90	115	4 00
Alabama	2000	22	72	4 00
Mississippi	2500	11	36	3 00
Louisiana	7500	17	50	4 00
Tennessee	2000	20	60	4 00
Kentucky	2000	38	100	2 00
Ohio	1200	36	72	3 00
Indiana	1000	30	52	2 00
Illinois	1000	26	55	3 00
Missouri	1500	18	59	3 00

REIGNING SOVEREIGNS OF EUROPE.

State.	Name.	Title.	Age.
Sweden	Charles XVI	King	70
Russia	Nicholas I	Emperor	38
Denmark	Frederick VI	King	66
G. Britain	William IV	do	69
Holland	William I	do	62
Belgium	Leopold	do	44
Prussia	Fred'k Wm. III	do	55
Saxony	Anthony	do	69
Brunswick	William	Duke	28
Nassau	William	do	42
Hesse-Hamburg	Louis	Landgrave	64
Hesse-Cassel	William II	Elector	67
Baden	Ch. Leopold Fr.	Grand Duke	45
Wurtemb'g	William	King	53
Bavaria	Louis	do	48
Austria	Francis	Emperor	66
France	Louis Phillippe	King	61
Switzerland	John J. Hess	Land'man	
Spain	Maria Isabella II	Queen	4
Portugal	Donna Maria	do	15
Sardinia	Cha's Emanuel	King	56
Tuscany	Leopold II	Grand Duke	37
Parma	Maria Louisa	Duchess	43
Modena	Francis IV	Duke	55
Lucca	Charles Louis	do	35
States of the Ch.	Gregory XVI	Pope	69
Two Sicilies	Ferdinand II	King	29
Greece	Otho	do	19
Turkey	Mahmoud II	Sultan	49

* In Connecticut the Senators have two dollars per day, and the Representatives one dollar fifty cents.

[*From the Washington Globe.*]

OFFICIAL—DEPARTMENT OF STATE.—*Notice to Claimants in Colombia.*—In a despatch received at this Department from the Chargé d'Affaires at Bogota, dated the 16th of January last, it is stated that a Covention between the States of New Granada and Vanezuela, was concluded on the 23rd of December, 1834, providing for the recognition and settlement of all the debts of the former Colombian Government, with interest.—New Granada is to pay fifty, Venezuela twenty-eight and a half, and Equador twenty-one and a half per cent. The convention is to be submitted to the Congress of each State, and ratified within eight months of its date; and immediately after the exchange of the ratifications, a Board of Commissioners will assemble at Bogota, for the purpose of hearing and deciding upon all claims.

Head Quarters of the Army,
ADJUTANT GENERAL'S OFFICE,
Washington, March 14, 1835.

The following communication has been received from the War Department, and is published for the information of all concerned:

DEPARTMENT OF WAR,
March 3, 1835.

The proviso in the act of Congress, passed March 3, 1835, entitled "An act making additional appropriations for the Delaware Breakwater, and for certain harbors, and removing obstructions in and at the mouths of certain rivers, for the year one thousand eight hundred and thirty five," and which prohibits the allowance of extra compensation to officers of the Army, has been submitted to the Attorney General for his opinion, and that officer has decided that it extends to and prohibits the allowance of all extra compensation, of every kind whatsoever, for which provision is not made by law. Hereafter, therefore, no such extra compensation will be allowed.

This prohibition took effect from the date of the passage of the law, and extends to the following cases:

Per diem to officers on bureau duty.

Per diem to officers in charge of working parties.

Per diem to the Secretary of the Military Board.

Per diem to Engineer officers, for disbursing public money.

Per diem to the Assistant Engineer at the Delaware Breakwater.

Per diem to the members of the Medical Board.

Per centage to Topographical officers disbursing in the field.

Monthly allowance or per centage to officers of the line temporarily performing staff duties.

Per centage to officers for disbursing funds not properly appertaining to their department.

Allowance to the Medical officers purchasing supplies for the medical service.

Per centage to Military Storekeepers for disbursements.

Compensation to officers on duty connected with the removal of the Indians, except their actual travelling expenses, which are allowed by the act of June 30th, 1834, entitled 'An act to provide for the organization of the Department of Indian Affairs.'

Allowance to the officer disbursing money at the seat of Government, under the regulation of the War Department of May 31st, 1833.

Extra compensation to the Assistant Surgeon for attending laborers on the works at Hampton Roads.

Allowance to the officer acting as Adjutant at the Military Academy.

Allowance to the officer acting Professor of Chemistry at the Military Academy.

These cases are enumerated for the information of the Army, and embrace all the extra allowances which have been reported to this department, in answer to the inquiries which have been made. It is possible, however, that some may have been omitted, and the enumeration will not, therefore, be considered as sanctioning the allowance of any claim, because it is not herein expressly provided for. But the construction of the act will apply so as to prevent the granting of any extra compensation of any nature whatever, unless expressly authorized by law.

The Attorney General has decided, that the general clause in the above proviso will render illegal the allowance of any per centage or compensation for disbursing appropriations, made previous to, as well as during, the last session of Congress. LEWIS CASS."

By order of ALEXANDER MACOMB, Major General, Commander-in-Chief.

ROGER JONES, Adj. General.

[*From the Daily Albany Argus.*]

DISTRIBUTION OF THE INCOME OF THE LITERATURE FUND.—At a meeting of the Regents of the University on the 25th day of February, instant, the distribution of $12,000 of the income of the Literature Fund for the last year, was made among the several Academies entitled to participate therein. A certificate of the distribution has been delivered to the Comptroller, by whose warrant the amount apportioned to each Academy will be paid by the Treasurer of the State, on drafts or orders therefor drawn on him by the treasurer of the several Academies: such drafts or orders being accompanied by a proper certificate from the President or Secretary of the academy, under its corporate seal, that the person signing said draft is the treasurer of the academy, duly appointed by the trustees thereof:

Names of the Academies entitled to participate in the distribution.	*Amount apportioned to each Academy.*	
FIRST DISTRICT.		
Clinton Academy,	$96 65	
Erasmus Hall,	280 70	
N. Y. Institution for Deaf and Dumb,	630 35	
Oysterbay,	179 40	
Union Hall,	312 90	
		$1500 00
SECOND DISTRICT.		
Delaware,	43 54	
Dutchess County,	309 65	
Farmer's Hall,	87 08	
Kingston,	111 27	
Montgomery,	212 91	
Mount Pleasant,	248 97	
Newburgh,	309 65	
North Salem,	72 57	
Red Hook,	106 36	
		$1500 00
THIRD DISTRICT.		
Albany,	278 80	
Albany Female,	470 08	
Albany Female Seminary,	197 45	
Hudson,	139 30	
Jefferson,	42 80	
Kinderhook,	140 41	
Lansingburgh,	34 66	
Schenectady,	203 50	
		$1500 0
FOURTH DISTRICT.		
Cambridge, Washington,	98 51	
Canajoharie,	197 02	
Franklin,	147 77	
Gouverneur H. School,	205 95	
Granville,	80 60	
Johnstown,	80 60	
Plattsburgh,	111 93	
St. Lawrence,	291 65	
Washington, (Salem)	286 57	
		$1500 00
FIFTH DISTRICT.		
Bridgewater,	56 52	
Clinton Gr. School,	31 00	
Fairfield,	118 50	

Hamilton,	198	48
Lowville,	69	26
Onoida Institute,	198	65
Rensselaer, Oswego,	105	73
Sem. of O. & G. Conferences, Cazenovia,	349	00
Union, (Jefferson Co.)	83	85
Utica,	195	06
Whitesboro',	123	95
		$1500 00

SIXTH DISTRICT.

Cherry Valley,	207	50
Cortland,	551	05
Franklin,	182	33
Hartwick,	145	03
Ithaca,	53	87
Oxford,	227	92
Owego,	60	
		$1500 0

SEVENTH DISTRICT.

Auburn,	209	55
Canandaigua,	109	55
Cayuga,	119	71
Onondaga,	56	52
Ontario Female Seminary,	289	35
Ovid,	113	08
Palmyra H. School,	269	45
Pompey,	36	58
Yates Co. Academy and Female Seminary,	206	21
		$1500 00

EIGHTH DISTRICT.

Fredonia,	279	62
Lewiston,	204	02
Livingston Co. H. School,	75	60
Middlebury,	241	82
Rochester H. School,	513	78
Springville, (Erie Co.,)	185	16
		$1500 00

A true copy. GIDEON HAWLEY,
Secretary of the University.
Albany, Feb. 25th, 1835.

New Census Law.

An act to amend chapter third, part first of the revised statutes, entitled, of the census and enumeration of the inhabitants of the State,
Passed March 16, 1835.

The people of the State of New York, represented in Senate and Assembly, do enact as follows:

§ 1. It shall be the duty of the Secretary of State, so to extend the blank returns for enumerating the inhabitants of this State, contained in chapter third, part first, of the revised statutes, that the blind inhabitants of this State shall hereafter be enumerated in the same manner as is now provided by said chapter for the enumeration of the deaf and dumb, and also the number of glass factories, rope factories, chain cable factories, oil cloth factories, dying and printing factories, clover mills, paper mills, tanneries, breweries, and the quantity and the value of the raw material manufactured in each, and the value of the manufactured article manufactured in each the preceding year, together with the quality and value of the raw material, and the manufactured article used and manufactured the preceding year in such other manufactories as are enumerated in the revised statutes.

§ 2. The Secretary of State is hereby authorized to forward to the clerks of the different counties, the blank returns and copies of the third chapter of the revised statutes, together with a sufficient number of copies of this act, in such manner as he may deem proper, instead of transmiting them by mail, as required by the third section of said chapter.

§ 3. This act shall take effect immediately after its passage.

FRAZER'S MAGAZINE.—In an article entitled "The Songs of Italy," we find a translation of Petrarch's sonnet to the Fountain of Vaucluse, so beautiful that we cannot refrain from extracting it.

Visions of love! ye dwell
In memory still enshrined.—
Here, as she once reclined,
A shower of blossoms on her bosom fell!
And while th' enamoured tree
From all its branches thus
Rained odoriferous,
She sat, unconscious, all humility.
Mixt with her golden hair, those blossoms sweet
Like pearison amber seemed;
Boure their allegiance deemed
Due to her flowing robe and lovely feet:
Others, disporting took
Their course adown the brook:
Others aloft, wafted in airy sport,
Seemed to proclaim, "To-day Love holds his merry court!"

TO ——.

Oh, tell me not of dance or song, of banqueting or ball,
Or of the bright eyes beaming round thy fairy festival;
Oh, tell me not those eyes were blue and holy "like the light
Of cloudless climes and starry skies," or dark eyes still more bright.

Oh, tell me not of rosy lips, of sunny smiles that weave
Their spell of deep enchantment round—the brightest may deceive;
Oh, tell me not of braided hair, of spirits bright and free,
They speak of earth and happiness, and what are these to me?

Oh, tell me not of spring's bright flow'rs, I've seen them all decay;
Have seen the winds of autumn come and sweep them far away;
And they who watch'd them in their pride of beauty, can they tell
Where now may be the dwelling place of all they lov'd so well?

Oh, tell me not of sunshine's mirth, the murmur of the bee,
Or the glad song of summer birds, for what are these to me?
They do but speak of vanish'd hours of happiness that ne'er
Can reach the heart when blight and wrong are darkly brooding there.

Oh, tell me not of happy homes,—you little know the sting,
The burning thought of agony that little word can bring.
The darkest bird that tries its wing can find at eve a nest,—
How weary is the spirit, then, that finds no place of rest:

Oh, tell me not of starlight hours, oh, tell me not of love
Oh, tell me not how bright the moon is beaming from above;
Oh, tell me not of youth and hope, but look upon my brow,
And tell me if these words can chase one dark shade from it now.

Then tell me not of all these things, nor wonder if I seem
To thee a thing so "changeable."—remember where the stream
Is deepest, there 'tis darkest too, and o'er its gloomy breast
The sun's bright rays may glance awhile, but never, never rest!

ELIZA.

[From the New-England Farmer.]

COLD WEATHER.—The facts stated by Mr. Breck, in your paper of January 14, respecting the difference of cold on the high and low land in still cold weather, are undoubtedly true, although I am not aware that it has been generally known. I have conversed respecting it for many years, but have found almost all persons incredulous.

My house is elevated from fifteen hundred to two thousand feet above tide water. And I learned from my feelings, many years since, that in still cold weather, the cold in the night and early in the morning was much more intense in the valleys than on the high lands. I have many times left my house at sunrise, when the cold was not uncomfortable, and in an hour descended a thousand feet, where I found the cold very intense. I have as often, in very cold still evenings, when the weather was constantly growing colder, ascended from the same valley, when I was almost frozen, and constantly as I ascended grew warmer until I came to my house.

Every person acquainted with the business of making maple sugar, knows that frost is necessary to the manufacture of it. The sap will not run from the tree more than twenty-four hours after it is thawed, until it is again frozen. In the sugar season, which is in this country from the middle of March to the middle of April, the trees are generally frozen in the night and thawed in the day, when the sap runs. In one fourth part of the year, there are many days in succession in which no sugar is made very near me from the want of frosts. Whereas, at the same time, people living not more than six hundred rods distant, but on ground a few hundred feet lower, make it constantly with great success. This happens only in still, calm weather. This circumstance cannot lie, however variant and improper the construction of thermometers may be.

I now come to the observations made on different thermometers, and I can only compare those in this vicinity, except so far as they have been communicated from different places this winter.

I will first remark, that my thermometer generally indicates a less degree of heat, or greater degree of cold, than the thermometers in the valleys in this vicinity. The average difference for this year is six to seven degrees.

I see it stated in your paper of Jan. 14, that the thermometer at Montpelier, in Vermont, stood on December 26th, in the morning, at 28 degrees below zero. Of this I had heard before. Mine, which is also Fahrenheit, stood at 11 degrees below; a difference of 17 degrees. I am eleven miles from Montpelier, and elevated probably twelve or fifteen hundred feet above that place.

At 9, P. M., of January 3d, my thermometer was at 20 degrees, and at sunrise of the 4th, it was 23 degrees below zero. At Montpelier that morning, the mercury was frozen, as it was also in another valley four miles from me. In another valley, in a different direction, five miles from me, the thermometer was 40 degrees below zero. This last thermometer, by a comparison, ranges exactly with mine. The two last mentioned valleys are, probably, a thousand feet below me. On the morning of January 11th, my thermometer was 14 degrees above zero. In the valley five miles from me, it was 11 degrees below at the same time, and the same at Montpelier, a difference of 25 degrees. On the morning of January 12, mine was 16 degrees above zero. In the valley five miles from me, it was 10 below; a difference of 25 degrees.

Mr. Breck put his thermometer, on the morning of Jan. 10, at 14 degrees below zero; mine was seven above, although two degrees further north.

After the cold morning of the 4th, my thermometer the five succeeding mornings stood as follows:

Jan. 5, zero. For a fortnight, commencing before the cold weather, and ending after it, the air was unusually still.
6, 14 below.
7, 19 do.
8, 12 do.
9, 1 do. The thermometer on this day, Jan. 9th, was 10 degrees above zero at 1 P. M.

My thermometer is at the north end of my house, facing directly to the north, and three feet from the ground.

During the last six years the thermometer has been lower two or three times in each winter, in still cold weather, in the valleys, than mine was at the same time. But the difference that has come to my knowledge, has never before this winter been more than thirteen degrees.

There has been but one colder morning here than that of the 4th of January for the last six years, and that was the 19th of January, 1833. The cold was then 26° below zero.

As to the cause of the unusual depression of the mercury in the valleys, which Mr. Breck seeks to learn, I do not profess to have much knowledge. However, I am willing to show you my opinion.

It is known that the air is generally heavier, and more dense in the valleys, than on the adjacent high lands, and it is therefore capable of containing more cold and frost.

As to the other branch of Mr. Breck's inquiry, "Whether, if there had been any wind the cold Sunday morning, there would have been any difference between the temperature of the hills and valleys?" This question I answer in the affirmative, without any hesitation. But the difference would have been the other way, if there had been much wind. It is a question that cannot be settled by theory, but it may by facts. And the facts which I shall adduce will show that the cold, in a cold windy time, is greater on the high lands than in the valleys, by several degrees.

From observations I have made for several years past, I have found that my thermometer has stood in the morning in very cold windy weather, eight or ten degrees lower than those in the valley before alluded to. Indeed, whenever the thermometer is below the freezing point, and the wind strong, the cold is greater here than it is in the valleys. But the extent of the difference depends on the intensity of the cold, and the strength of the wind. And a greater difference in such cases than ten degrees has not come within my knowledge, and then the thermometer on the high lands was 20 and 22° below zero, and that in the valleys 10 and 12° below.

I think the cause of this difference is not so easily accounted for as in the other case. If it should be said, as I have often heard said, that the high wind blows the dense cold air to the high lands, how would the less dense and warmer air descend into the valleys to take its place? This would be against the laws of gravitation.

To be continued.]